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ENVIRONMENTAL ASSESSMENT

Crow Boundary Settlement Act

Phase 4A Land Exchange

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The Bureau of Land Management is responsible for the stewardship of our public lands. It is committed to manage, protect, and improve these lands in a manner to serve the needs of the American people for all times. Management is based on the principles of multiple use and sustained yield of our nation's resources within a framework of environmental responsibility and scientific technology. These resources include recreation; rangelands; timber; minerals; watershed; fish and wildlife; wilderness; air; and scenic, scientific, and cultural values.

BLM/MT/PL-02/010

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1.0 INTRODUCTION AND BACKGROUND

1.1 Background

The Crow Boundary Settlement Act of 1994 mandated the Bureau of Land Management to acquire State and private land inside of the Crow Indian Reservation as a part of the legislation developed to redress a century-old boundary survey error. For many years after the discovery of the survey error the Crow Tribe sought resolution of the problem via Congressional legislation. Finally, on November 2, 1994 the Crow Boundary Settlement Act (CBSA) was enacted and signed into law. Figure 1-1 is a map representation of this survey error and indicates separate parcels that are specifically addressed in the CBSA. This legislation, in part, provided for the following:

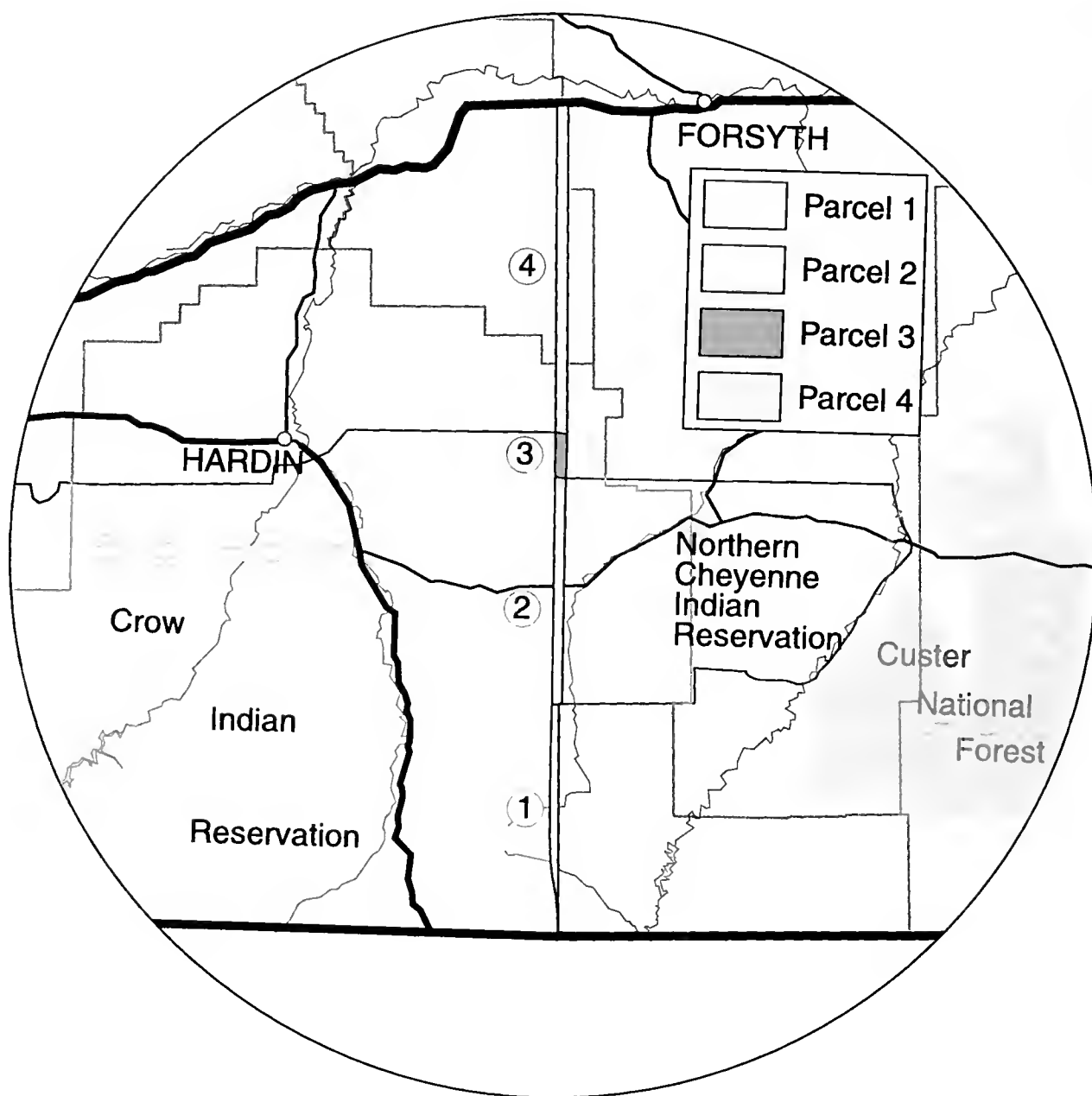
1. It reaffirmed the true 107th Meridian location as the eastern boundary of the Crow Indian Reservation. This re-affirmation had the effect of moving the erroneous monumented boundary easterly to its correct on-the-ground location coinciding with the 107th Meridian (Parcel 1 in Figure 1-1).
2. It created an agreement whereby the Crow Tribe relinquished its claim to land which was located in the Northern Cheyenne Indian Reservation as a result of correcting the on-the-ground location of the 107th Meridian (Parcel 2 in Figure 1-1).
3. It provided for a relinquishment by the Crow Tribe of surface and mineral ownership claims on Parcels 3 and 4 (Figure 1-1).
4. In compensation for relinquishment of lands on the Northern Cheyenne Reservation and north to the Yellowstone River, it created a mechanism whereby the Crow Tribe could acquire State-owned land and private land located inside of the Reservation through the land exchange process. Public land managed by the Bureau of Land Management (BLM) and located outside of the Reservation was to be used as a means to complete both the BLM/State land exchanges in

Phases 1, 2, and 3 and the assembled exchange to be completed in Phases 4 and 4A.

The exchanges with the State of Montana, Phases 1, 2, and 3, have been completed and as a result, all State-owned land under the jurisdiction of the Montana Dept. of Natural Resources and Conservation within the Crow Indian Reservation has been acquired by the Federal government and will be held in trust by the United States for the Crow Indian Tribe. One assembled land exchange has been completed and it has provided for the acquisition of 7,854.87 acres of private land within the Reservation which had a fair market appraised value of \$1,287,964.40. The total amount of value owed to the Crow Tribe via assembled exchange, which was agreed upon in the Agreement to Initiate a Land Exchange, as amended, is \$1,669,194.70. With the closure of Phase 4, private land within the Reservation with an appraised fair market value of \$1,287,964.40 was acquired and as a result, the remaining balance due the Crow Tribe is \$381,230.30. Consequently, a final assembled exchange, Phase 4A, is needed to accommodate this remaining value (\$381, 230.30) due to the Crow Tribe. Phase 4A is now being processed and will be analyzed in this Environmental Assessment.

The additional private land to be acquired in Phase 4A inside of the Crow Indian Reservation is a part of the Pryor Creek Ranch and is adjacent to that land acquired in Phase 4. This ranch was identified for acquisition by the Crow Tribe in 1999 in accordance with the Crow Boundary Settlement Act and, because a commitment had to be made to acquire the land, the ranch was actually purchased by the Tribe in January of 2000. Per the Act, the BLM must now acquire a portion of that land and it must be held in trust for the Crow Tribe by the United States. The overall amount of acreage to be acquired by the Federal government in the assembled exchanges must have an appraised value which is equal to the difference between the total value of the State Trust lands originally located within the exterior boundaries of the Crow Reservation (45,049.04 acres) and the value of the State lands which were acquired by the United States at the completion of Phases 1, 2, and 3 (33,293.32 acres). The difference in the aforementioned acreages is 11,755.72 acres (45,049.04 minus 33,293.32) and this acreage is recognized to be the original State lands which were

Figure 1-1 107th Meridian Settlement Map



disposed by the State of Montana and it is the value of those lands which will be utilized to determine the total amount of the Pryor Creek Ranch which must be acquired by the United States.

Because the 11,755.72 acres were transferred out of State ownership many years ago, the use of those lands by subsequent private landowners has significantly changed the character of much of those lands. Therefore, the valuation of the 11,755.72 acres was determined by multiplying the average per acre appraised value of those State lands acquired by BLM in Phases 1, 2, and 3 (\$141.99 per acre) times the 11,755.72 acres, or \$1,669,194.70. In the first assembled exchange 7,854.87 acres with an appraised value of \$1,287,964.40 was acquired, thus leaving a remaining balance of \$381,230.30 to be accommodated in Phase 4A.

1.2 Purpose and Need for the Proposed Action

The purpose of this Environmental Assessment is to comply with the National Environmental Policy Act (NEPA) to address the impacts of the Phase 4A Land Exchange. This exchange of land is between BLM and the Crow Indian Tribe with MontWyo West acting as the facilitator for the exchange. The BLM lands are scattered tracts¹ mostly located in central and northern Montana under the jurisdiction of the Lewistown BLM Field Office and the Havre BLM Field Station. The private land to be acquired consists of a portion of the Pryor Creek Ranch which was purchased by the Crow Tribe in January of 2000 in preparation for the assembled exchange portion of the Land Exchange Project.

The first three exchanges, Phases 1, 2, and 3, were completed earlier as direct exchanges with the State of Montana and provided for the acquisition of all of the State lands within the Crow Reservation which were under the jurisdiction of the Montana Dept. of Natural Resources and Conservation. The first of the assembled exchanges, Phase 4, provided for the acquisition of much of the Pryor Creek Ranch and accommodated most of the value which was still due to the Crow Tribe pursuant to the Crow Boundary Settlement Act. This Environmental Assessment addresses the final exchange, Phase 4A, which will conclude this Land Exchange Project. While this Environmental Assessment addresses only the last exchange proposed under the Crow Boundary Settlement Act, understandings between the entities involved, programmatic agreements, and some of the environmental information developed and impacts analyzed are common to all of the exchanges. Also, some BLM exchange tracts in Phase 4 are being carried over to Phase 4A and the analysis in the Environmental Assessment for Phase 4 is still applicable to those tracts being carried over to Phase 4A. Thus, this EA incorporates by reference and is tiered² to the EAs prepared for the previous land exchanges.

1.3 Public Scoping

Initially, before any exchanges were proposed, the CBSA Steering Committee³ sponsored two public hearings in Billings and one at Crow Agency to inform the public of the details of the CBSA and the concepts relative to direct and assembled land exchanges which would be used to implement the Act.

¹ Terms like tract, parcel, property, and lands are used interchangeably in this EA in general usage referring collectively to lands involved in the exchange. When describing specific lands, the term "parcel" is generally used for a property that has a unique, single legal description which may consist of more than one tract of BLM land.

² Tiering is the incorporation by reference of the general discussion and concentrating solely on the issues specific to environmental documents subsequently prepared. (40 CFR 1508.28)

³ The CBSA Steering Committee consists of representatives from the Montana Association of Counties, Montana Department of Natural Resources and Conservation, the Crow Tribe, the Bureau of Land Management, the Solicitor's Office of the Department of Interior, and is chaired by a Bureau of Indian Affairs representative.

Six scoping meetings were held for the Phase 4 assembled exchange. These scoping meetings were fairly well attended, with a total of 65 persons attending. Most of those in attendance were grazing lessees and /or those landowners who owned land adjacent to the BLM land. The remainder of the attendees were County Commissioners, reporters for local media, politicians or their representatives, and other interested parties. A Notice of Exchange Proposal was sent to all lessees of the affected BLM lands, those entities holding third party interests, and those who submitted written comments as a result of the scoping meetings. The Notice of Exchange Proposal was also published in the newspapers of general circulation in the area of the exchange lands for the purpose of informing the public and seeking comments.

The most common interest at the scoping meetings was in regards to the appraised values of the BLM tracts and the appraisal process to be utilized. There was also much interest as to what would happen if the BLM grazing lessee was not interested in acquiring a BLM tract at the appraised fair market value. Other concerns were expressed in regards to the time frame for completion of the exchange, the cost of the facilitator to the entity acquiring the BLM land, and whether the subsurface estate was to be included in the proposed land exchange.

For Phase 4A, a Notice of Exchange Proposal was sent out to all grazing lessees of the BLM land, those entities holding third party interests, and other interested parties who had earlier expressed an interest in the Phase 4 land exchange. The Notice of Exchange Proposal was also published in the newspapers of general circulation in the area of the exchange lands for the purpose of informing the public and seeking comments. Public meetings were not held for Phase 4A because most of the exchange lands are in the same general areas as those lands utilized and addressed in Phase 4. Also Phase 4A is considered to be an extension of Phase 4 where the issues and concerns are expected to be much the same and therefore, were carried over to this exchange.

1.4 Conformance with BLM Land Use Plans

Initially, BLM policy in Montana regarding the exchange of public lands was developed specifically in the Supplement to State Director Guidance for Resource Management Planning in Montana and the Dakotas for Land Pattern Review and Land Adjustment of 1984, and the State Director Guidance-Access of 1989; which established retention and disposal zones throughout Montana. However, as Resource Management Plans (RMPs) were completed, the criteria developed in those RMPs for retention or disposal of public land superseded the criteria in the aforementioned 1984 document. The Headwaters RMP and the West HiLine RMP reiterate the criteria for disposal and retention areas, although the West HiLine and RMP is more "tract specific." The BLM lands proposed for disposal in this Phase 4A Exchange meet the disposal criteria.

One BLM parcel (HC074) identified for use in Phase 4A was not analyzed for disposal in the West HiLine Resource Management Plan. This land (2.04 acres) is identified in the Notice of Intent to Amend, which can be found in Appendix A. This Environmental Assessment will analyze the effects of disposing of that land and will provide the basis for amending the West HiLine RMP to allow for disposal of parcel HC074.

The parcel of BLM located in Madison County, which consists of three tracts for 71.72 acres, is within the scope of the Dillon Resource Area Management Framework Plan. The utilization of those tracts in the proposed land exchange would be in conformance with that land use plan as they satisfy the criteria for disposal which was developed in the Supplement to State Director Guidance for Resource Management Planning in Montana and the Dakotas for Land Pattern Review and Land Adjustment. Also that land use plan provides for the exchange of public lands to achieve greater efficiency with regard to administration and to meet national objectives.

The Supplement to State Director Guidance for Resource Management Planning in Montana and the Dakotas for Land Pattern Review and Land Adjustment provided guidance for all major types of land adjustment. Three types of criteria were established to provide guidance in categorizing the public lands and making decisions concerning specific land adjustment actions—retention, disposal, and acquisition. Criteria in the supplement were used to identify retention and disposal zones for Montana. Retention zones predominantly contain better blocked public lands that meet the retention criteria, define areas where BLM intends to retain existing public lands and hopes to acquire additional lands through exchange. Disposal zones are areas where BLM lands have been identified for potential removal from BLM administration—preferably through exchange. Most of the BLM parcels being considered for use in this exchange are in disposal zones. However, BLM has the discretion to include retention lands in an exchange to serve an important public purpose, such as those embodied in the Crow Boundary Settlement Act.

The lands to be acquired inside of the Crow Indian Reservation were not addressed in BLM's land use plans, however, in regards to the acquisition of these lands, the RMP's allow for the acquisition of lands which facilitate national, state, or local priorities or mission statement needs. The Crow Boundary Settlement Act is a national priority and it specifically requires that BLM acquire private land inside of the Reservation through the use of land exchanges to compensate for the 11,755.72 acres of State land which had been disposed. Once these private lands are acquired, they are to be held in trust by the United States for the sole use and benefit of the Crow Tribe.

1.5 Relationship to Statutes, Regulations, Mutual Agreements, or other Plans

As required in the Act, the proposed land exchange would be processed in accordance with Section 206 of the Federal Land Policy and Management Act of 1976, as amended, and the regulations at 43 CFR 2200.

The BLM lands being considered for use in the exchange are located in Chouteau, Blaine, Fergus, Hill, Meagher, Madison, and Toole Counties and the lands to be acquired are located in Big Horn County. None of the counties have a county-wide comprehensive land use plan which would affect this action.

Most of the BLM properties are currently leased for livestock grazing. Transfer of ownership of those lands would be completed in conformance with the grazing regulations at 43 CFR 4120. This regulation provides for a two-year notification to grazing lessees prior to adjusting grazing leases due to the conveyance of the BLM land. No mineral values are involved in the proposed exchange and the mineral estates will not be transferred.

2.0 PROPOSED ACTION AND ALTERNATIVES

2.1 *Proposed Action*

2.1.1 Proposed Action (Exchange Alternative)

This alternative provides for an assembled exchange which will utilize certain scattered isolated tracts of BLM land located mostly in northern and central Montana to acquire certain private lands located within the Crow Indian Reservation. The Crow Boundary Settlement Act requires that if the value of the land acquired from the State of Montana in Phases 1, 2, and 3 is not equivalent to the value of the land originally granted to the State within the Crow Indian Reservation, then additional land is to be acquired inside of the Reservation through assembled land exchanges. The State of Montana obtained title to 45,049.04 acres of land within the Crow Indian Reservation. Of those 45,049.04 acres once owned by the State, 33,293.32 acres were still in State ownership at the beginning of the CBSA exchange process and 11,755.72 acres had been disposed by the State of Montana (45,049.04 minus 33,293.32) at some time between 1920 and the passage of the Act in 1994. The CBSA places an initial priority for the first five years after passage of the Act for exchanging BLM lands for the remaining State land on the Reservation (this has been completed) and then processing an assembled exchange in order to acquire private land inside of the Crow Reservation which would be equivalent to the value of the 11,755.72 acres disposed by the State.

The Crow Tribe was requested, prior to the initiation of Phase 4, to identify private land within the Reservation which was available for acquisition and which they would want to have acquired in Phases 4 and 4A. Subsequently, in January of 2000, the Crow Tribe acquired the Pryor Creek Ranch in anticipation of processing the proposed assembled land exchange.

The Crow Tribe acquired the land at that time because the current owner needed to expedite the conveyance and as a result the Tribe had to make a commitment regarding the acquisition of the land. The United States must now acquire a portion of that property from the Crow Tribe which is equal to the difference between the total value of the State lands which were located within the exterior boundaries of the Crow Reservation (45,049.04 acres) and the value of the State lands which have been acquired by the United States from the State of Montana in Phases 1, 2, and 3 (33,293.32 acres). As stated previously, the difference in the aforementioned acreages is 11,755.72 acres and it is the value of those lands which was utilized to determine how much private land would be acquired by the United States. Because the 11,755.72 acres were transferred out of State ownership many years ago, it was difficult to ascertain the specific legal description of those lands and additionally, the use of those lands by subsequent private landowners has significantly changed the character of much of those lands. Therefore, it was agreed by all parties that the valuation of the 11,755.72 acres was to be determined by multiplying the average per acre appraised value of those State lands acquired by BLM in Phases 1, 2, and 3 (\$141.99 per acre) times the 11,755.72 acres, or \$1,669,194.70. At the conclusion of Phase 4, there was still a balance of \$381,230.30 due to the Crow Tribe in order to fully satisfy the requirements of the Crow Boundary Settlement Act.

The specific proposed action for Phase 4A is to utilize the BLM lands described in Table 2-2 in an assembled exchange process in order to acquire \$381,230.30 in value of the private land described in Table 2-1. It is expected that some of the BLM lands ultimately may not be disposed for various reasons, but there must be enough BLM land identified for disposal in order to insure that the CBSA requirements are fully satisfied. The BLM lands are further described in Chapter 3, the Affected Environment, and an analysis of the impacts of the disposal of those lands is provided in Chapter 4. The Notice of Decision, which will be distributed and published after the Environmental Assessment is finalized, will identify specifically the BLM land to be utilized in this last CBSA assembled exchange.

The BLM land consists of 63 individual tracts totaling 4,921.20 acres. In Table 2-2, these properties are

combined for convenience into "parcels," with a single parcel number, where a parcel may consist of more than one property. Parcel numbers are used to identify tracts of BLM land throughout the Environmental Assessment without having to resort to the legal descriptions. The BLM exchange lands are under the jurisdiction of three BLM field offices and field stations. There are 23 parcels proposed for

disposal from the Lewistown Field Office totaling 3,270.37 acres; 27 parcels totaling 1,579.11 acres from the Havre Field Station; and one parcel from the Dillon Field Office totaling 71.72 acres. The BLM lands are identified on those maps in Figures 2-2 to 2-22. The Parcel numbers on those maps (Figures 2-2 to 2-21) correspond with the Parcel numbers listed in Table 2-2.

Table 2-1 Private Lands in Phase 4A of the Crow Boundary Settlement Act Land Exchange Project

Legal Description - Principal Meridian Montana	County	Acres
T4S, R28E		
Section 27: NW, NWNE, WSWNE, WSW, NNESW, SWNESW, WSESW	Big Horn	350.00
Section 28: All	Big Horn	640.00
Section 29: All	Big Horn	640.00
Section 30: Lots 5, 6, 11, 12, 13, 14, ESW, SE	Big Horn	474.58
Section 32: Lots 3, 4, EW, WE	Big Horn	402.30
T5S, R28E		
Section 4: Lots 2, 3, 4, SNW, WSWNE, NSW, SWSW, WSESW	Big Horn	362.97
Total Acres Big Horn County		2869.85

Table 2-2 BLM Lands in the Phase 4A Crow Boundary Settlement Act Exchange

Legal Description - Principal Meridian Montana	Parcel No.	County	Acres
T22N, R17E Sec. 34: SWNE, NESE, NENWSE	F005	Fergus	90.00
T21N, R17E Sec. 27: SESW Sec. 28: SWSW, SWSE	F021	Fergus	120.00
T18N, R25E Sec. 1: Lots 3, 4, SNW	F085	Fergus	163.44
T16N, R17E Sec. 12: NENE, SNE	F102	Fergus	120.00
T15N, R19E Sec. 2: SESE	F114	Fergus	40.00
T13N, R20E, Sec. 5: SW SE Sec. 9: NE SW Sec. 15: NW NW, SE SE Sec. 22: ENW	F171	Fergus	240.00
T19N, R23E Sec. 15: SNE, NSE	F200	Fergus	160.00
T19N, R23E Sec. 13: SW	F201	Fergus	160.00
T13N, R20E Sec. 2: Lot 2	F204	Fergus	39.39
T27N, R16E Sec. 11: NWSE	HC012	Chouteau	40.00
T26N, R11E Sec. 8: SWNE, SNW	HC049	Chouteau	120.00
T26N, R11E Sec. 18: Lot 1	HC051	Chouteau	37.67
T26N, R9E Sec. 35: NENE	HC057	Chouteau	40.00
T26N, R7E Sec. 11: NENE	HC062	Chouteau	40.00
T28N, R9E Sec. 18: Lot 1	HC074	Chouteau	2.04
T37N, R11E Sec. 2: Lots 5, 6, 7, and 8, SWNE	H001	Hill	114.04
T37N, R17E Sec. 7: SESE	H005	Hill	40.00
T37N, R15E Sec. 7: SESE	H016	Hill	40.00
T28N, R22E Sec. 29: NESW	B021	Blaine	40.00
T29N, R21E Sec. 24: SESW	B029	Blaine	40.00
T29N, R21E Sec. 24: SESE	B030	Blaine	40.00

Table 2-2 BLM Lands in the Phase 4A Crow Boundary Settlement Act Exchange

Legal Description - Principal Meridian Montana	Parcel No.	County	Acres
T28N, R19E Sec. 13: SNE, NWSE	B032	Blaine	120.00
T28N, R20E Sec. 30: SESW Sec. 31: Lots 1 & 2, ENW	B033	Blaine	188.30
T28N, R21E Sec. 7: Lot 1, NENW	B035	Blaine	77.06
T28N, R21E Sec. 6: SESE	B036	Blaine	40.00
T28N, R21E Sec. 17: NWSW Sec. 18: NESE	B037	Blaine	80.00
T28N, R21E Sec. 17: SSE	B038	Blaine	80.00
T28N, R21E Sec. 19: NWNE	B039	Blaine	40.00
T27N, R17E Sec. 26: SWNW	B040	Blaine	40.00
T27N, R17E Sec. 26: NESW	B041	Blaine	40.00
T27N, R21E Sec. 11: SWNW, NWSW	B065	Blaine	80.00
T27N, R22E Sec. 20: SENW	B072	Blaine	40.00
T31N, R1W Sec. 29: SWSE	T003	Toole	40.00
T31N, R1W Sec. 31: NENE	T004	Toole	40.00
T33N, R3W Sec. 25: SESW	T009	Toole	40.00
T35N, R1W Sec. 30: NENW	T015	Toole	40.00
T5N, R6E Sec. 8: WSW, SESW	M002	Meagher	120.00
T6N, R6E Sec. 2: Lots 3 & 4, SENE, SWNW, NWSW	M003	Meagher	200.01
T6N, R6E Sec. 28: NE, ENW, NWNW, SESE	M004	Meagher	320.00
T7N, R8E Sec. 22: WNW	M005	Meagher	80.00
T7N, R9E Sec. 2: WSW	M006	Meagher	80.00
T7N, R9E Sec. 32: NWNE, NENW	M007	Meagher	80.00
T7N, R11E Sec. 14: SNE, NWNW	M008	Meagher	120.00

Table 2-2 BLM Lands in the Phase 4A Crow Boundary Settlement Act Exchange

Legal Description - Principal Meridian Montana	Parcel No.	County	Acres
T8N, R10E Sec. 6: Lots 1, 3, and 4, SENE	M009	Meagher	155.75
T8N, R10E Sec. 5: Lots 1, 2, 5, SWNE	M012	Meagher	170.58
T12N, R3E Sec. 34: SENE, NW, NSW, NESE	M017	Meagher	320.00
T13N, R5E Sec. 28: SESE	M023	Meagher	40.00
T13N, R5E Sec. 34: WSW, ESE	M024	Meagher	160.00
T10N, R6E Sec. 6: Lot 5	M026	Meagher	49.78
T14N, R2E Sec. 18: Lot 4, SESW	M027	Meagher	81.42
T12N, R4E Sec. 2: SENE, WSW, NESE	M103	Meagher	160.00
T4S, R2W Sec. 10: Lots 2, 3, 4, 17, SSW SE	D1	Madison	71.72
Total BLM Acres			4921.20

Parcels F021, F114, B029, B030, B035, B036, B037, B038, B040, B041, B065, HC012, H001, and D1 were included in the Environmental Assessment for Phase 4. These parcels are being carried over from the Phase 4 land exchange because the entities who would have acquired those tracts at that time were unable to do so

for various reasons, such as additional time needed to make the necessary financial arrangements. The analysis and information in that Environmental Assessment for Phase 4 is still pertinent to those parcels and this information has been carried over and included in this EA.

2.2 Other Alternatives

2.2.1 No Action

This alternative is required by the National Environmental Policy Act and would be considered viable if it is determined that no action (i.e. no exchange as proposed) is in the public's interest. However, it would not mean that an exchange would not occur at some time because BLM will still be under the mandate of the Crow Boundary Settlement Act to provide the Crow Tribe, through an assembled exchange, private lands inside of the Crow Reservation that are equivalent in value to the 11,755.72 acres which had been previously disposed by the State of Montana.

2.2.2 Selection of other BLM Lands

Another alternative would be to select other BLM lands within the respective boundaries of the Montana BLM Field Offices. The selection of additional BLM lands, other than those identified in this Environmental Assessment would require a cultural inventory of those new BLM tracts and possibly an amendment of the affected land use plans. An additional effort to conduct cultural inventories on significantly more BLM disposal tracts would delay the final completion of the overall assembled land exchange portion of this project and would require

additional time and funding. Substantial time, funding, and effort has already been expended towards the completion of this project since its inception in 1995 and it is recommended that this be the last Phase of the CBSA Land Exchange Project. Consequently, this alternative will not be analyzed further in this Environmental Assessment.

2.2.3 Other Alternatives Considered but Not Carried Forward

An alternative way of accomplishing compensation for the Crow Tribe would be for the federal government to provide funds to the Tribe which is equivalent to the value of the land proposed for acquisition in this land exchange. However, this alternative would require either amending the CBSA or new legislation that would have Congress appropriate the necessary funds. This alternative was discussed as an option during various meetings and discussions early in the process. However, the Crow Tribe did not support opening the CBSA to amendment or new legislation to provide funds in lieu of an assembled land exchange. The Tribe specifically wanted to pursue the acquisition of both State and other private lands within the Reservation as a means for fulfilling the requirements of the Crow Boundary Settlement Act. Without tribal support for new federal legislation, this option is not feasible and will not be discussed further.

Figure 2-1 Private Lands In the CBSA Phase 4A Exchange

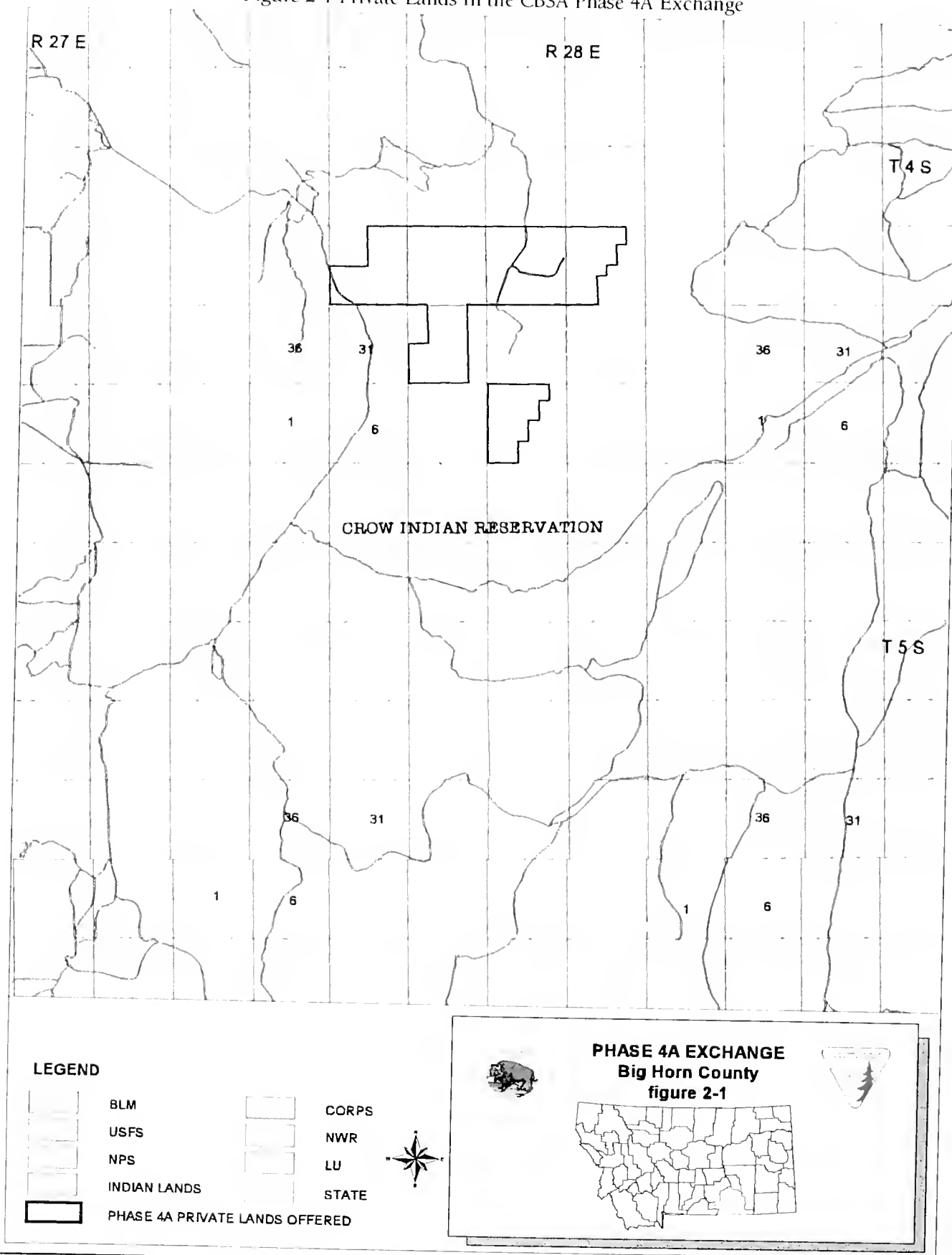


Figure 2-2 BLM Lands in the CBSA Phase 4A Exchange

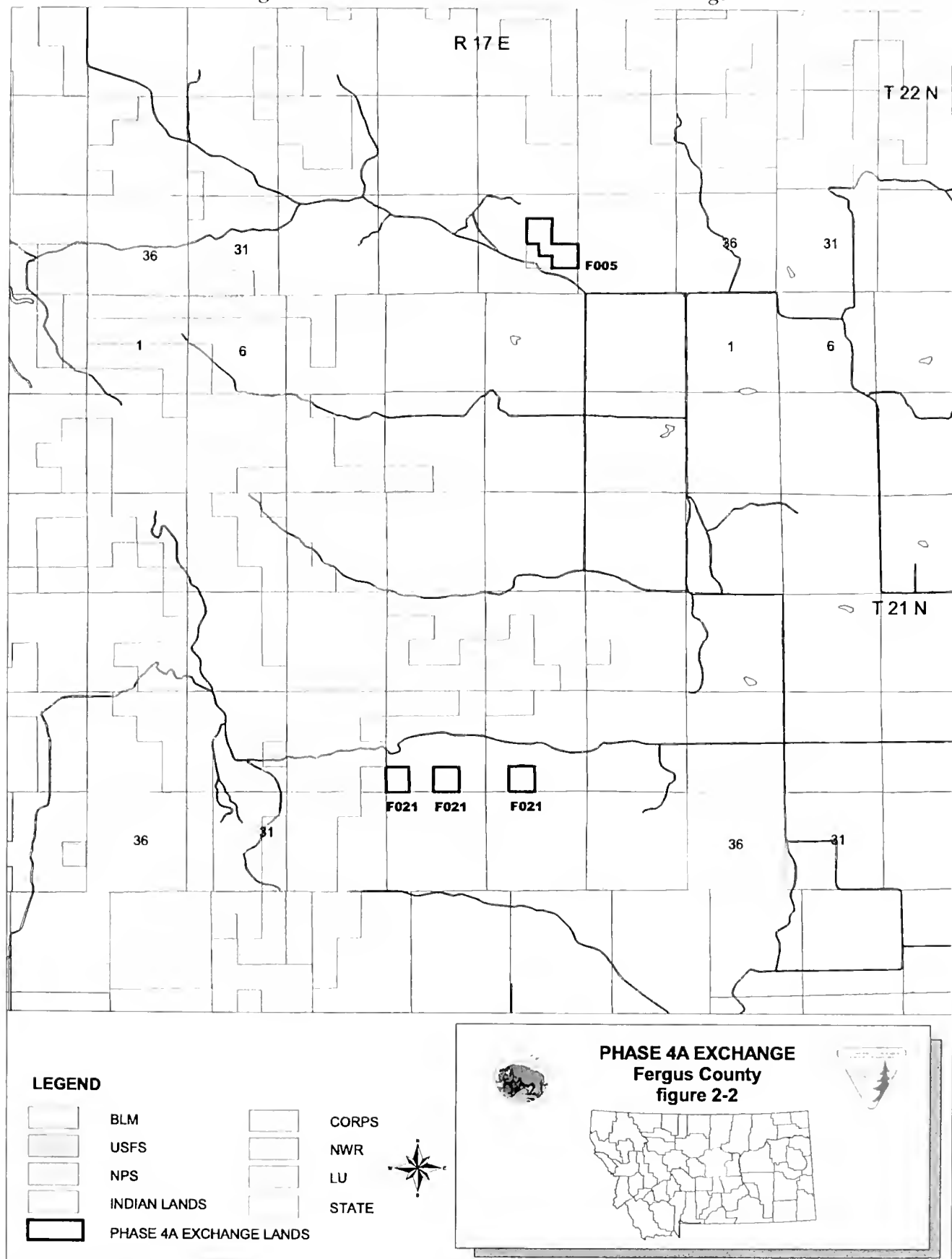


Figure 2-3 BLM Lands in the CBSA Phase 4A Exchange

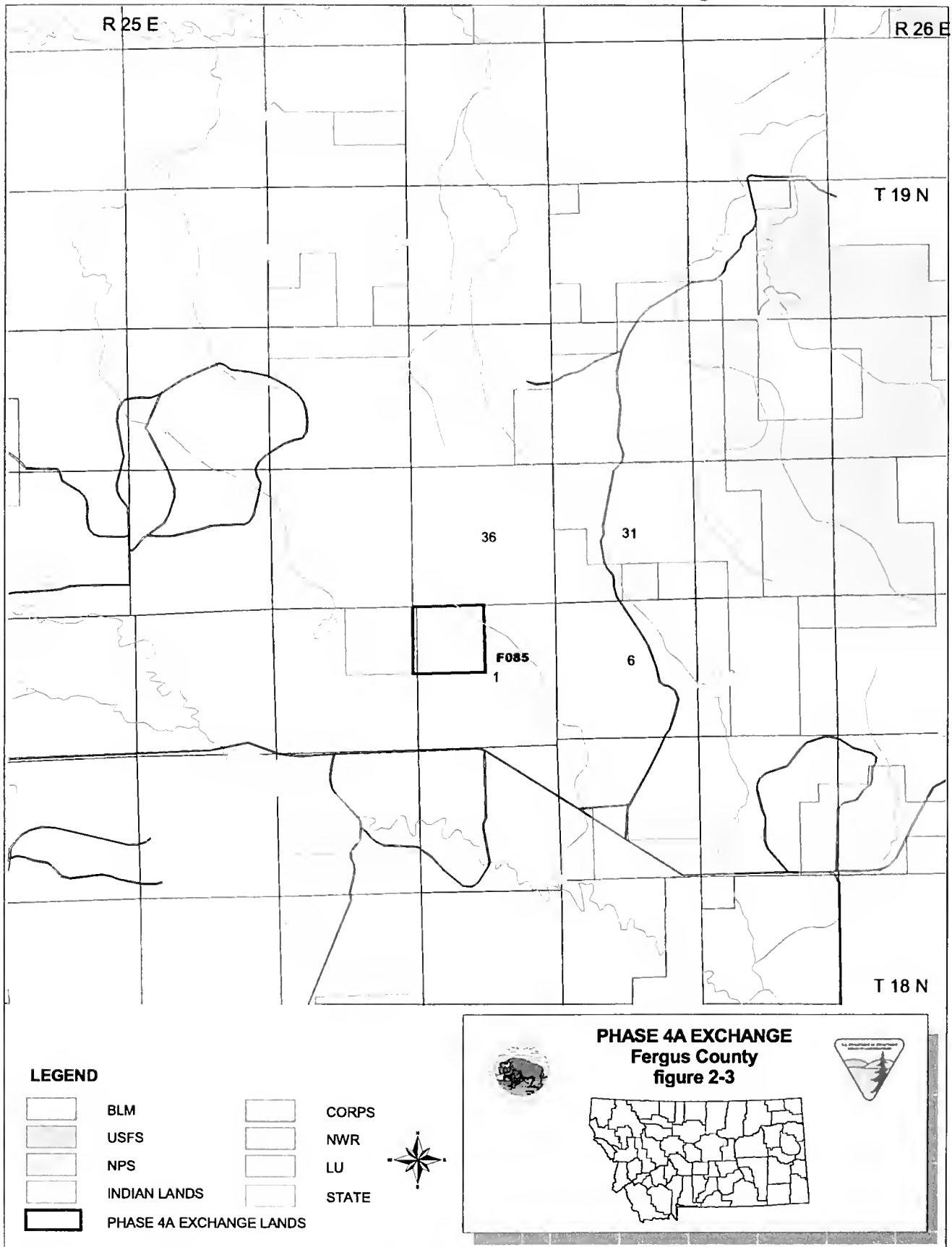


Figure 2-4 BLM Lands in the CBSA Phase 4A Exchange

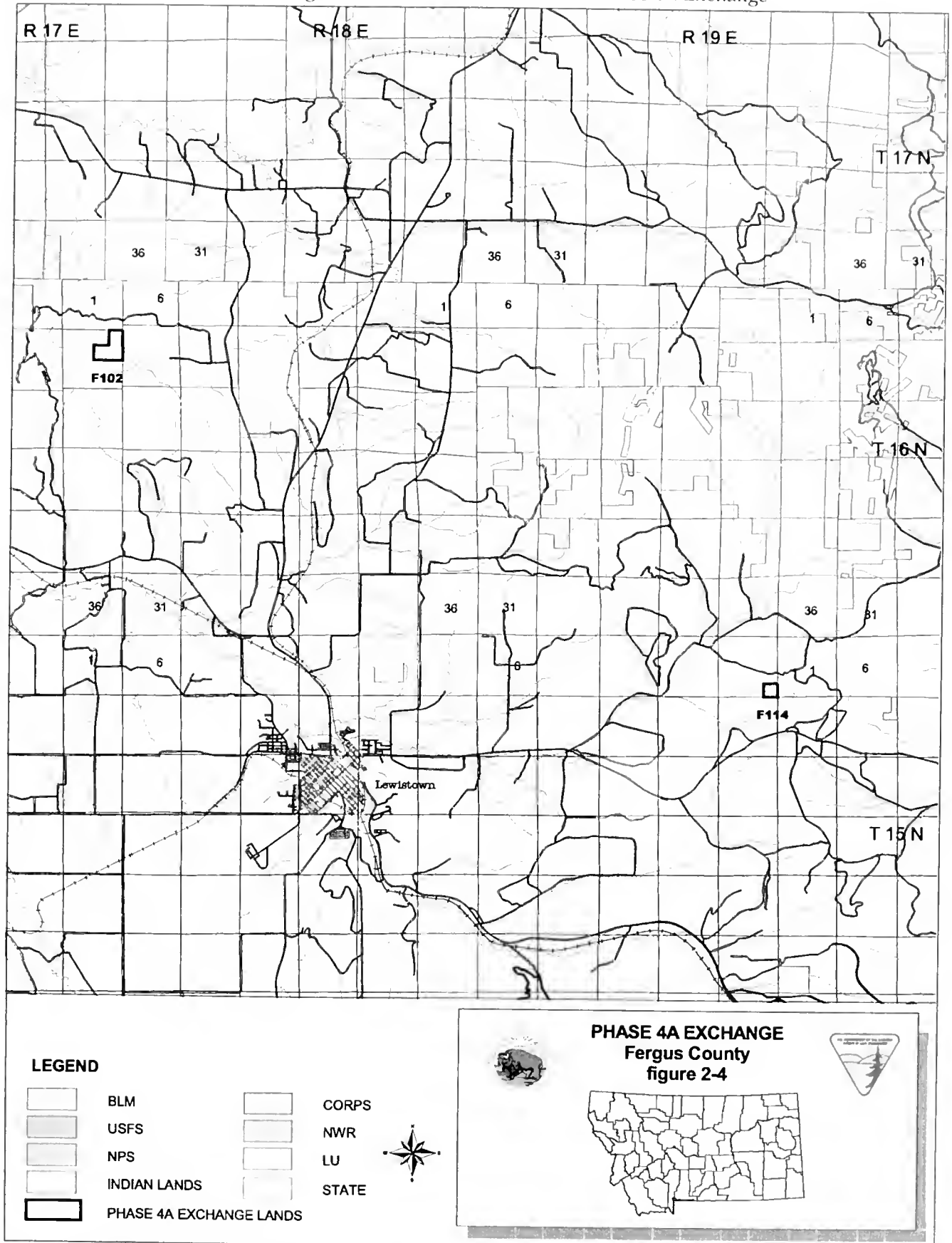


Figure 2-5 BLM Lands in the CBSA Phase 4A Exchange

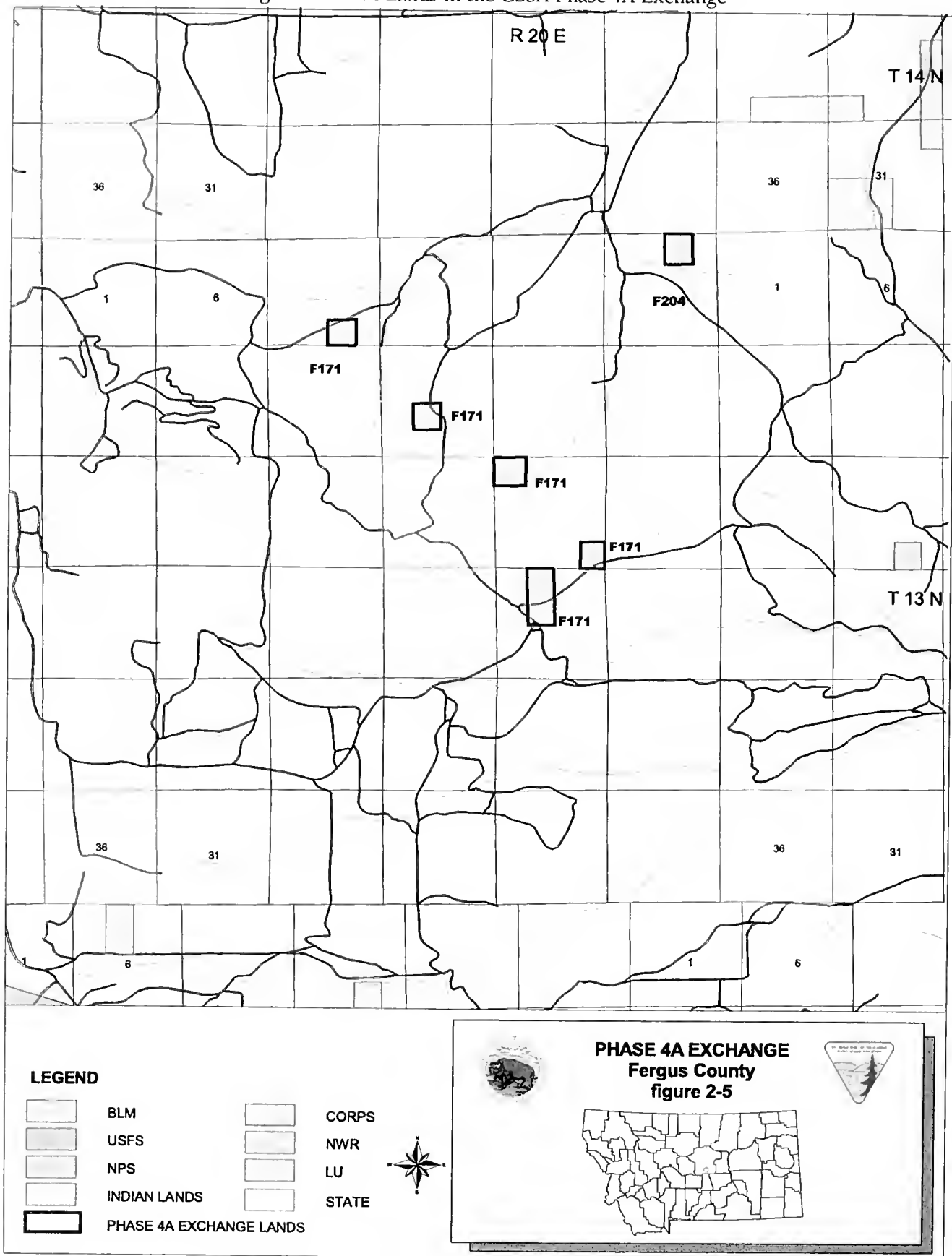


Figure 2-6 BLM Lands in the CBSA Phase 4A Exchange

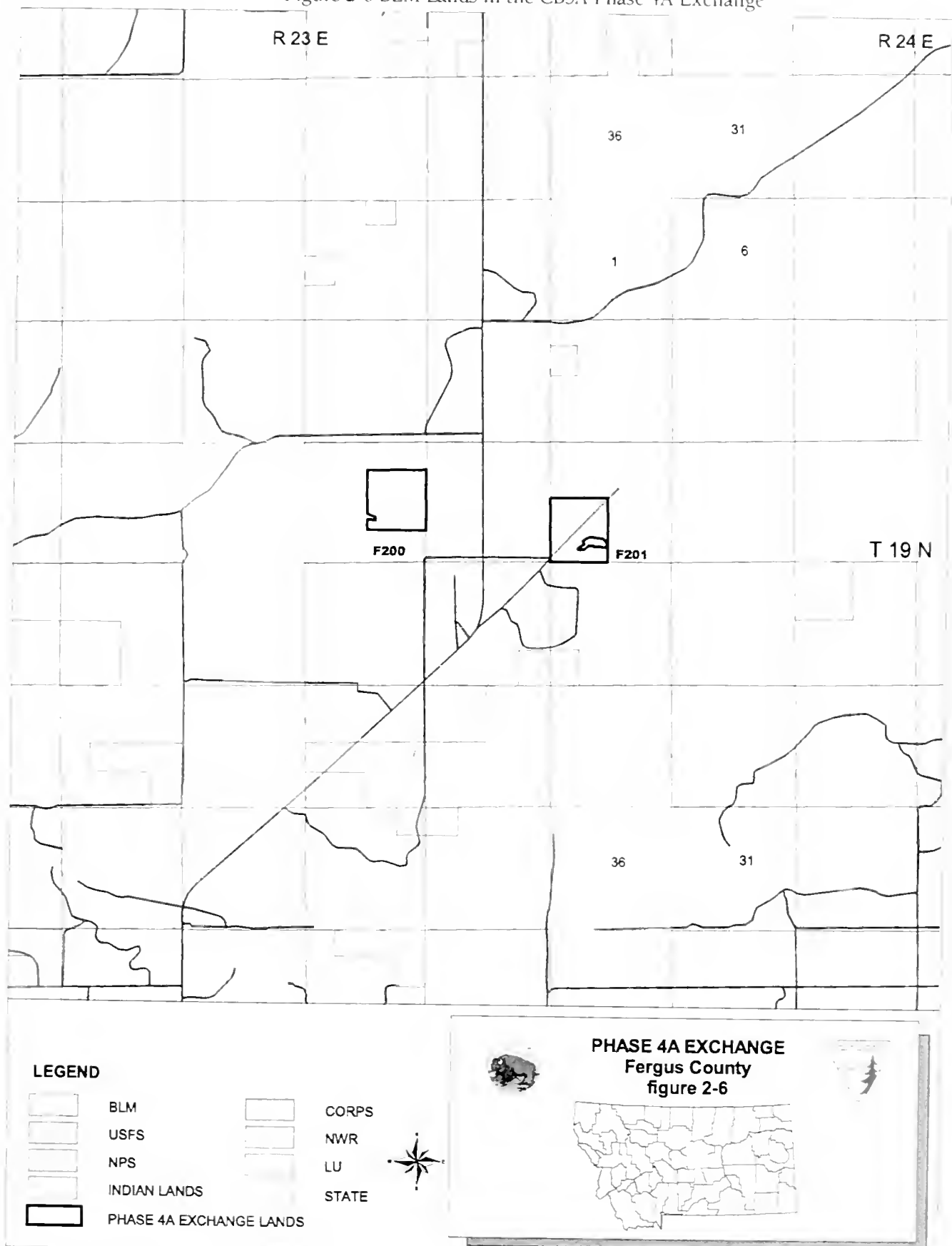


Figure 2-7 BLM Lands in the CBSA Phase 4A Exchange

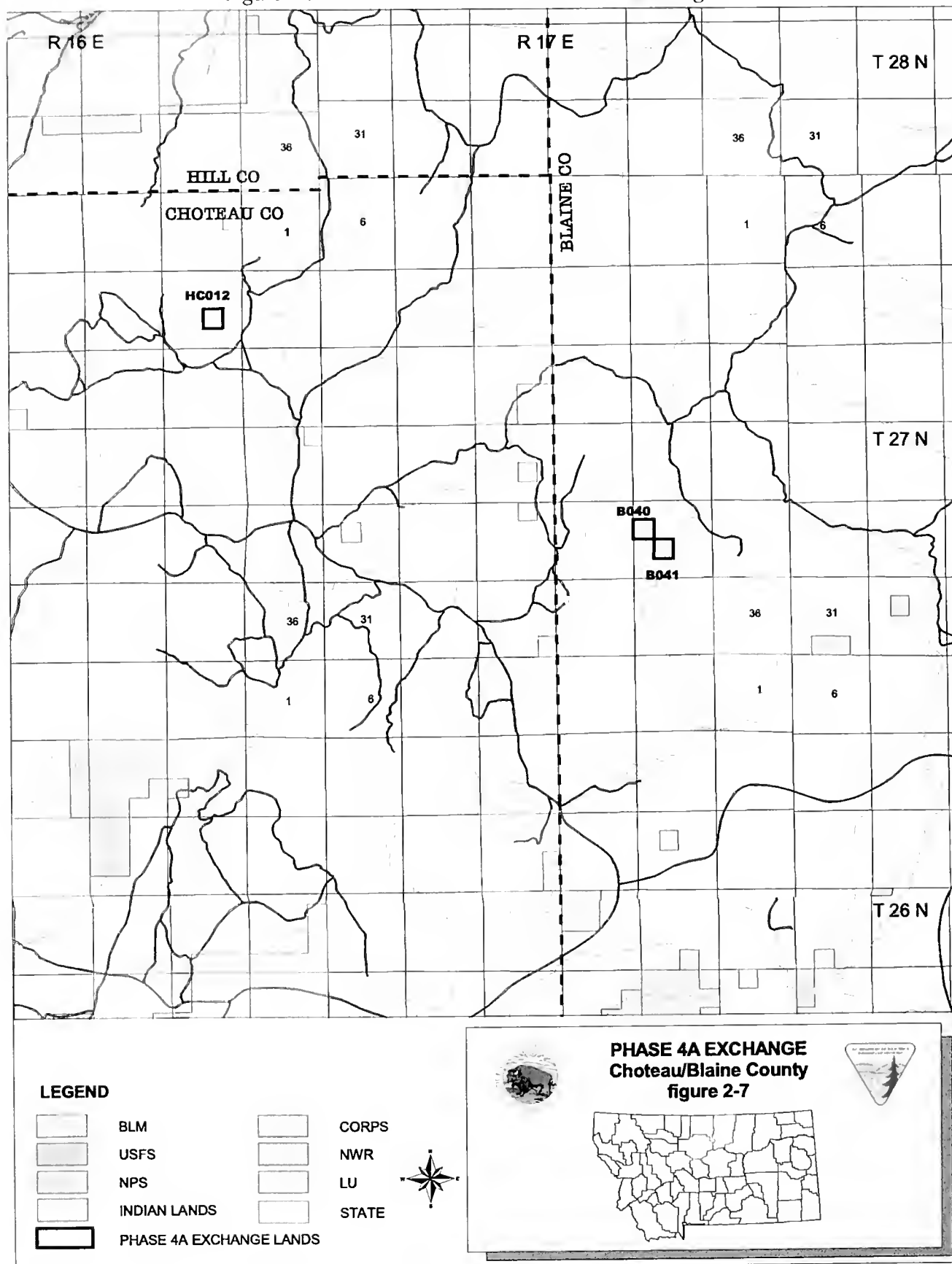


Figure 2-8 BLM Lands in the CBSA Phase 4A Exchange

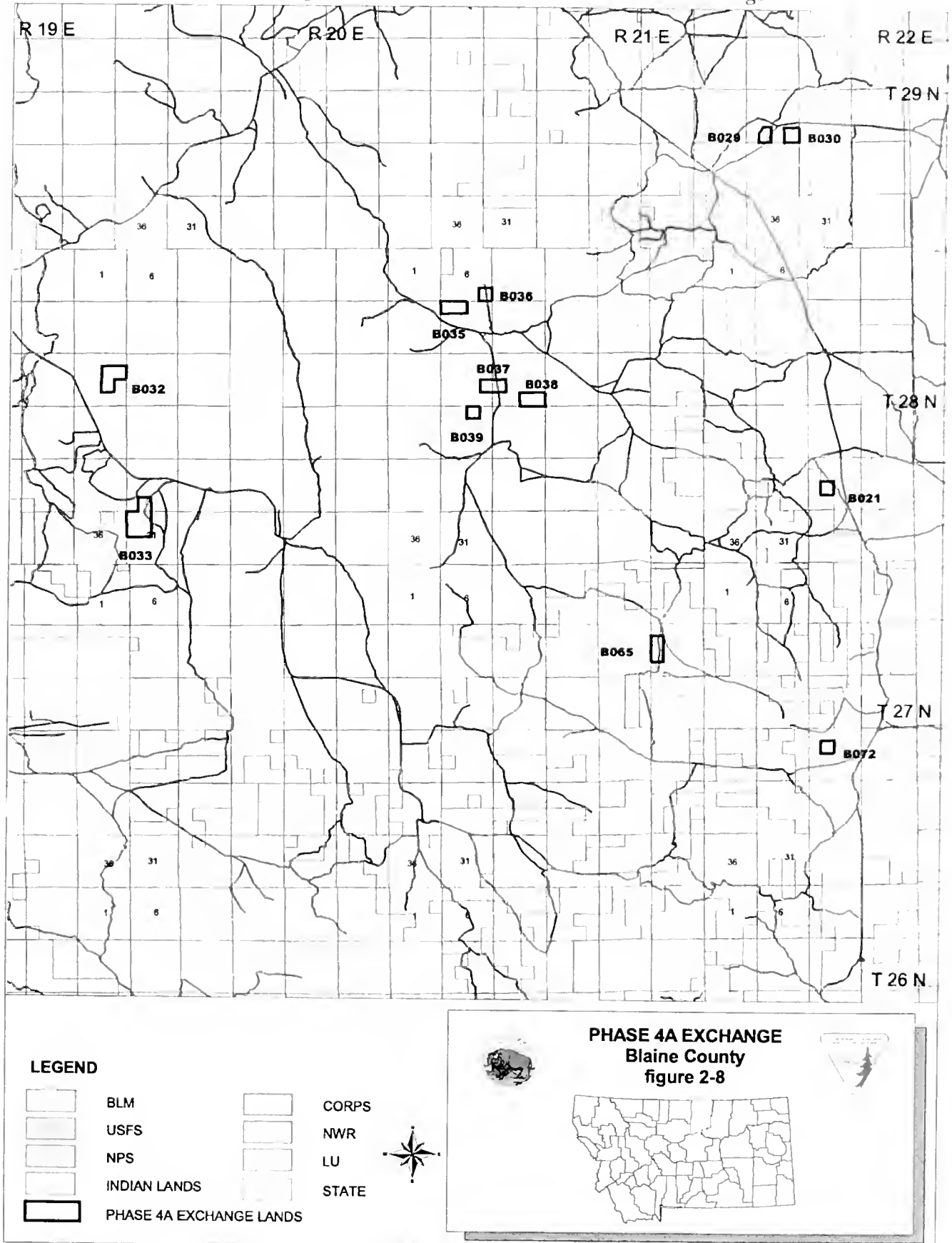


Figure 2-9 BLM Lands in the CBSA Phase 4A Exchange

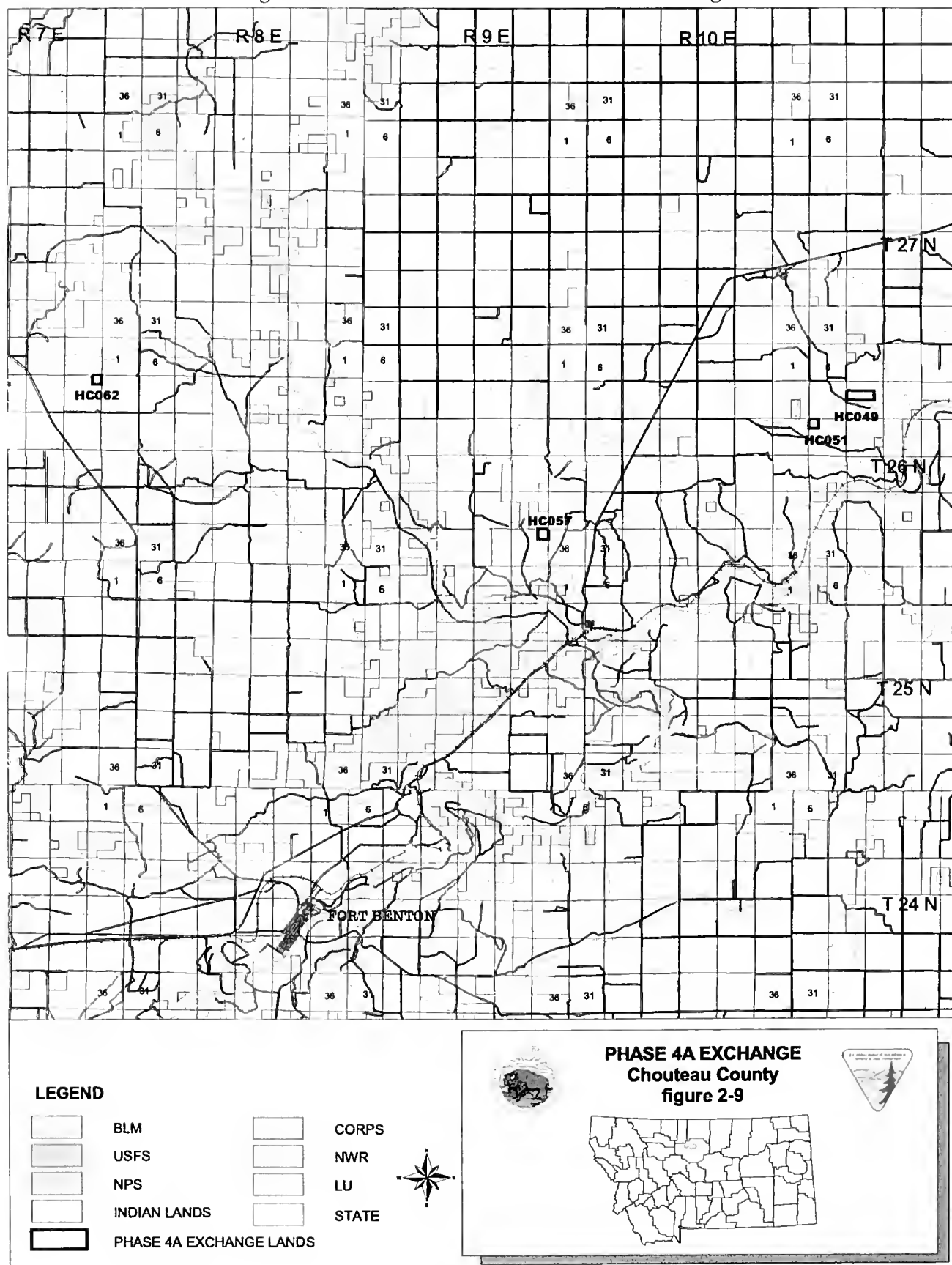


Figure 2-10 BLM Lands in the CBSA Phase 4A Exchange

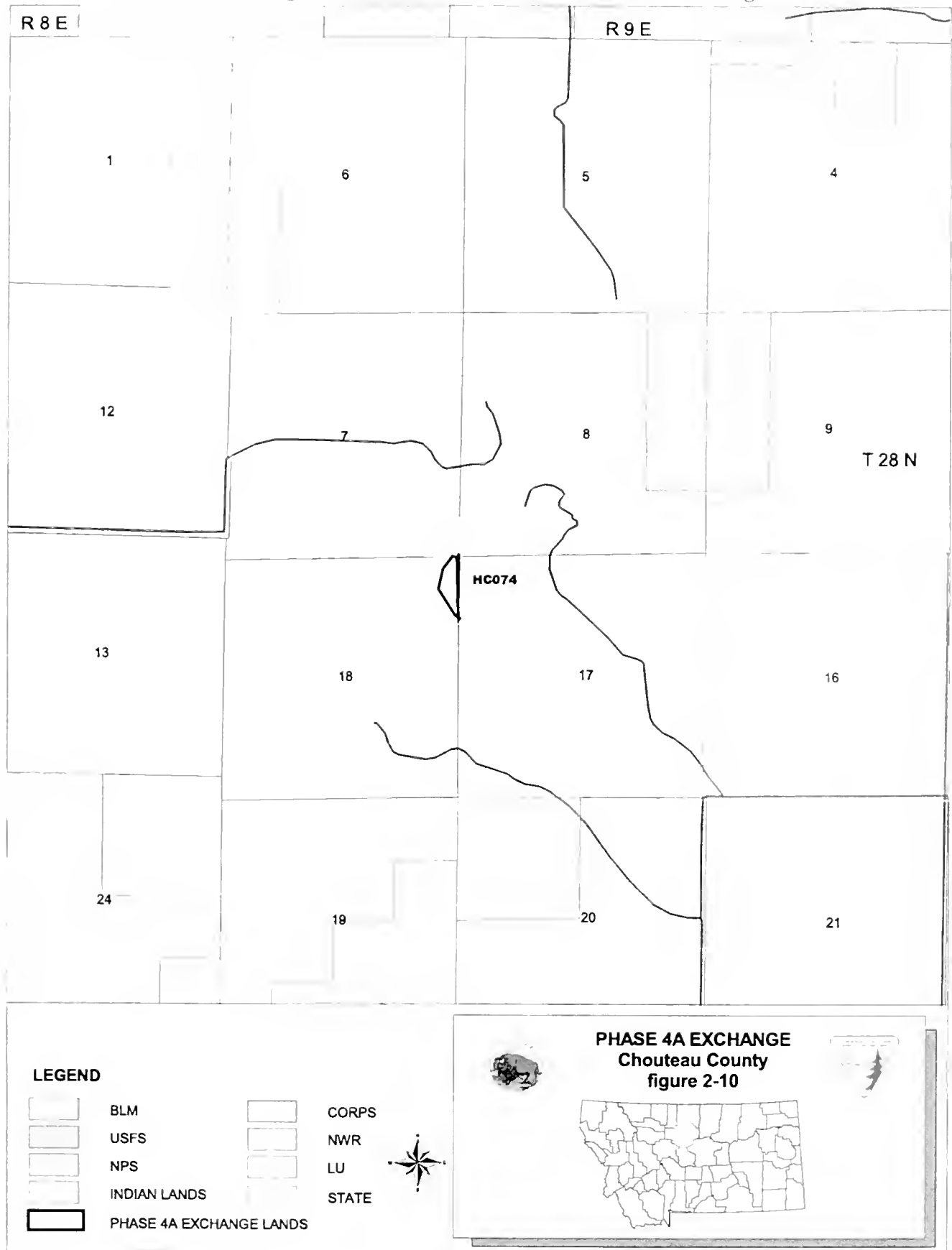


Figure 2-11 BLM Lands in the CBSA Phase 4A Exchange

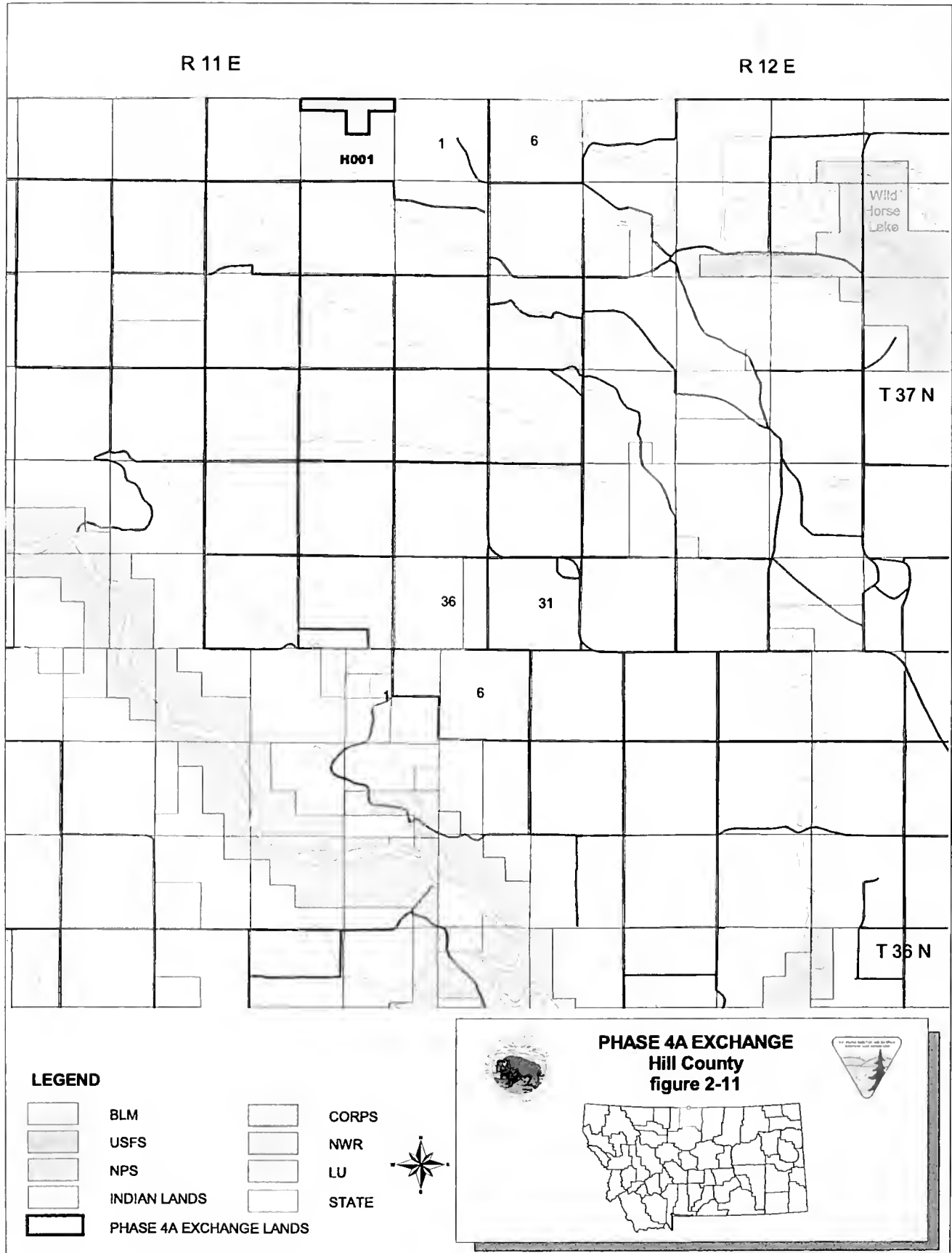


Figure 2-12 BLM Lands in the CBSA Phase 4A Exchange

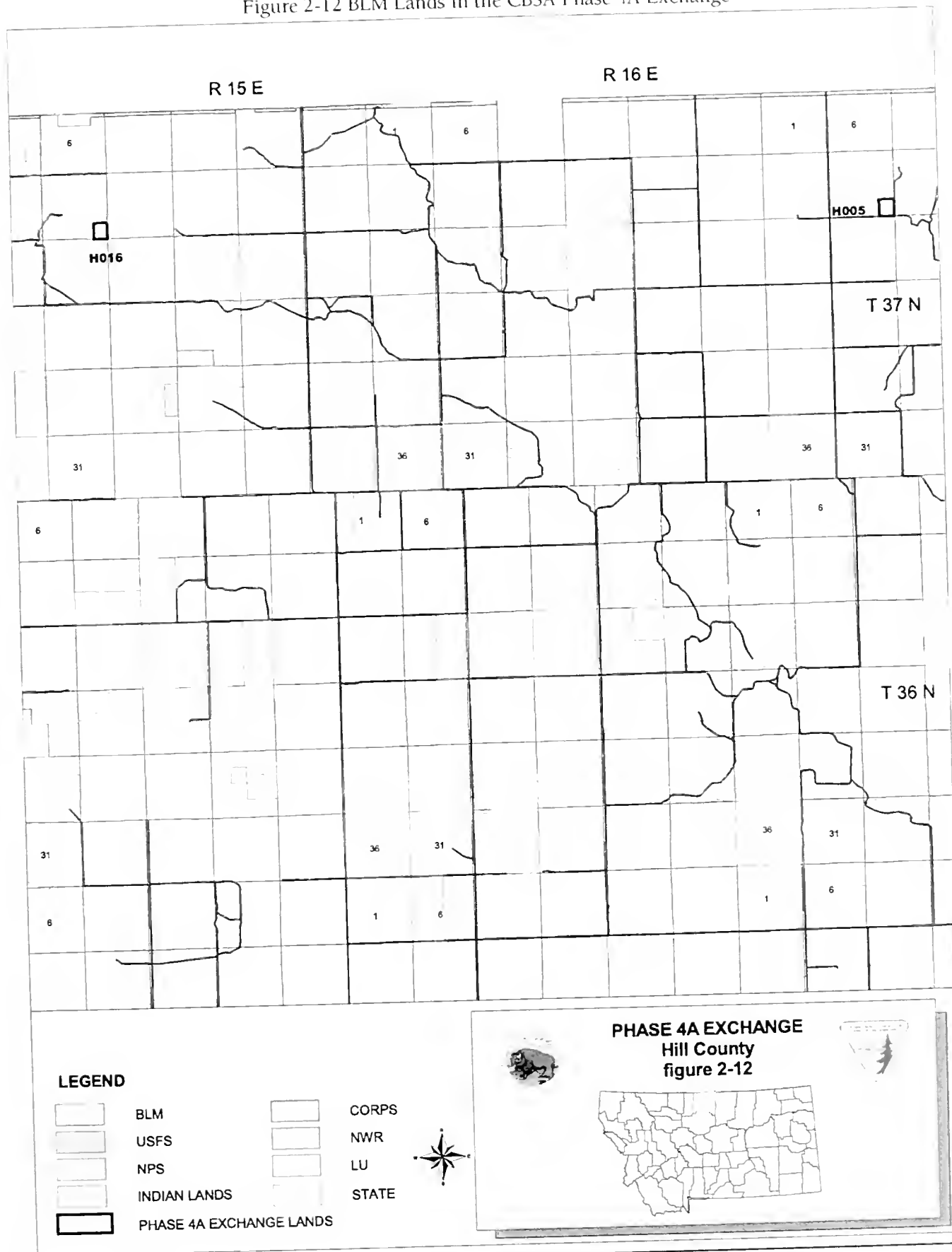


Figure 2-13 BLM Lands in the CBSA Phase 4A Exchange

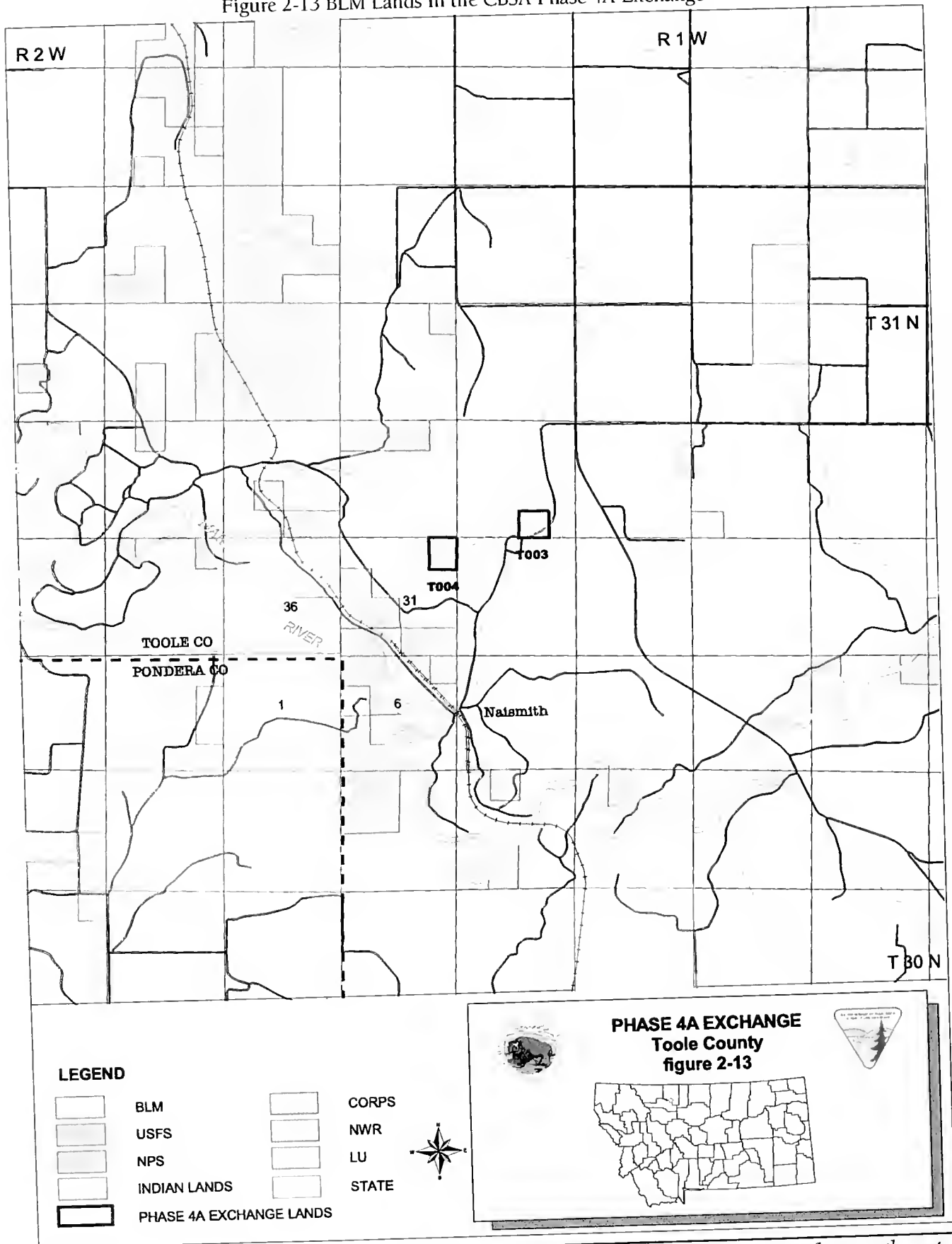


Figure 2-14 BLM Lands in the CBSA Phase 4A Exchange

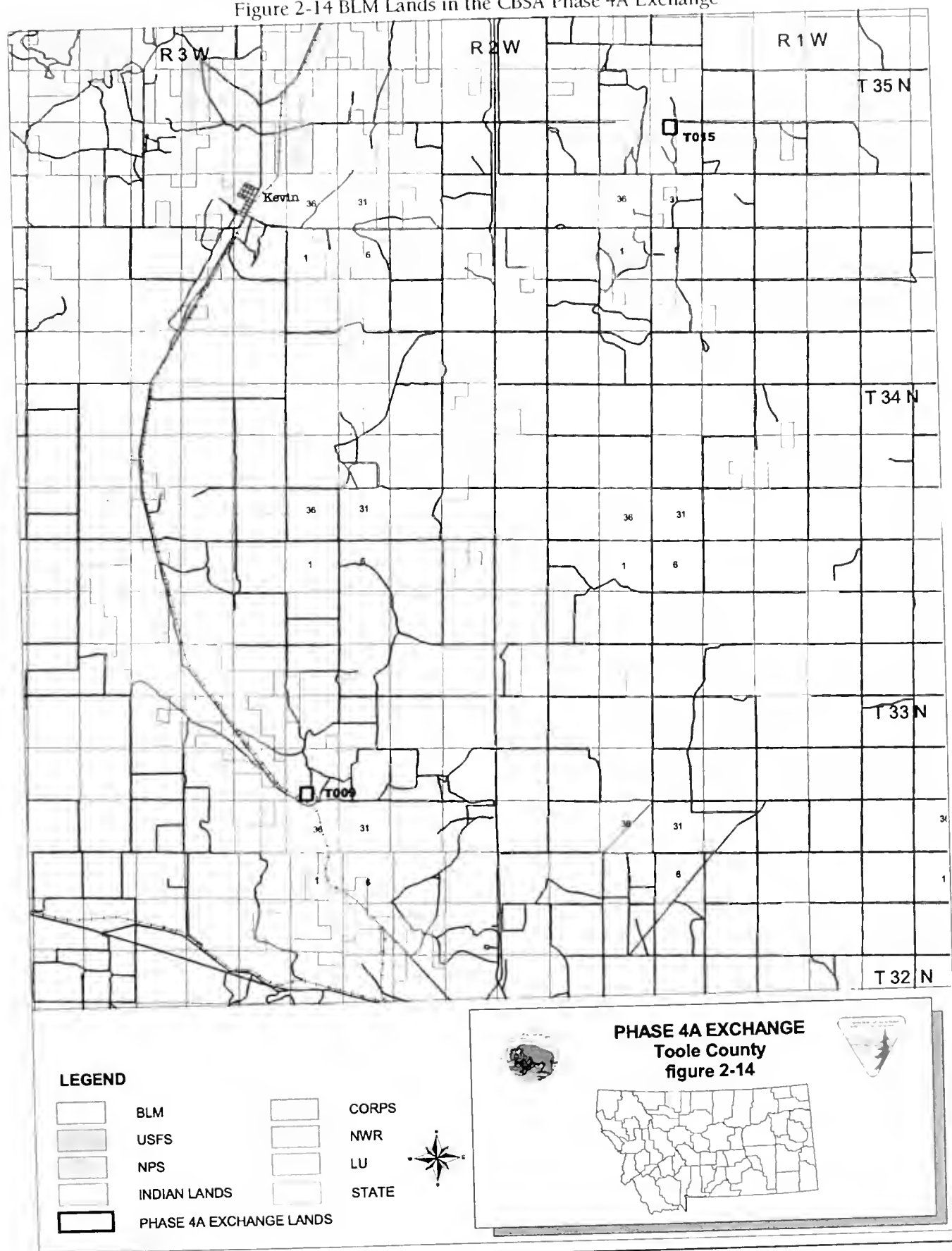


Figure 2-15 BLM Lands in the CBSA Phase 4A Exchange

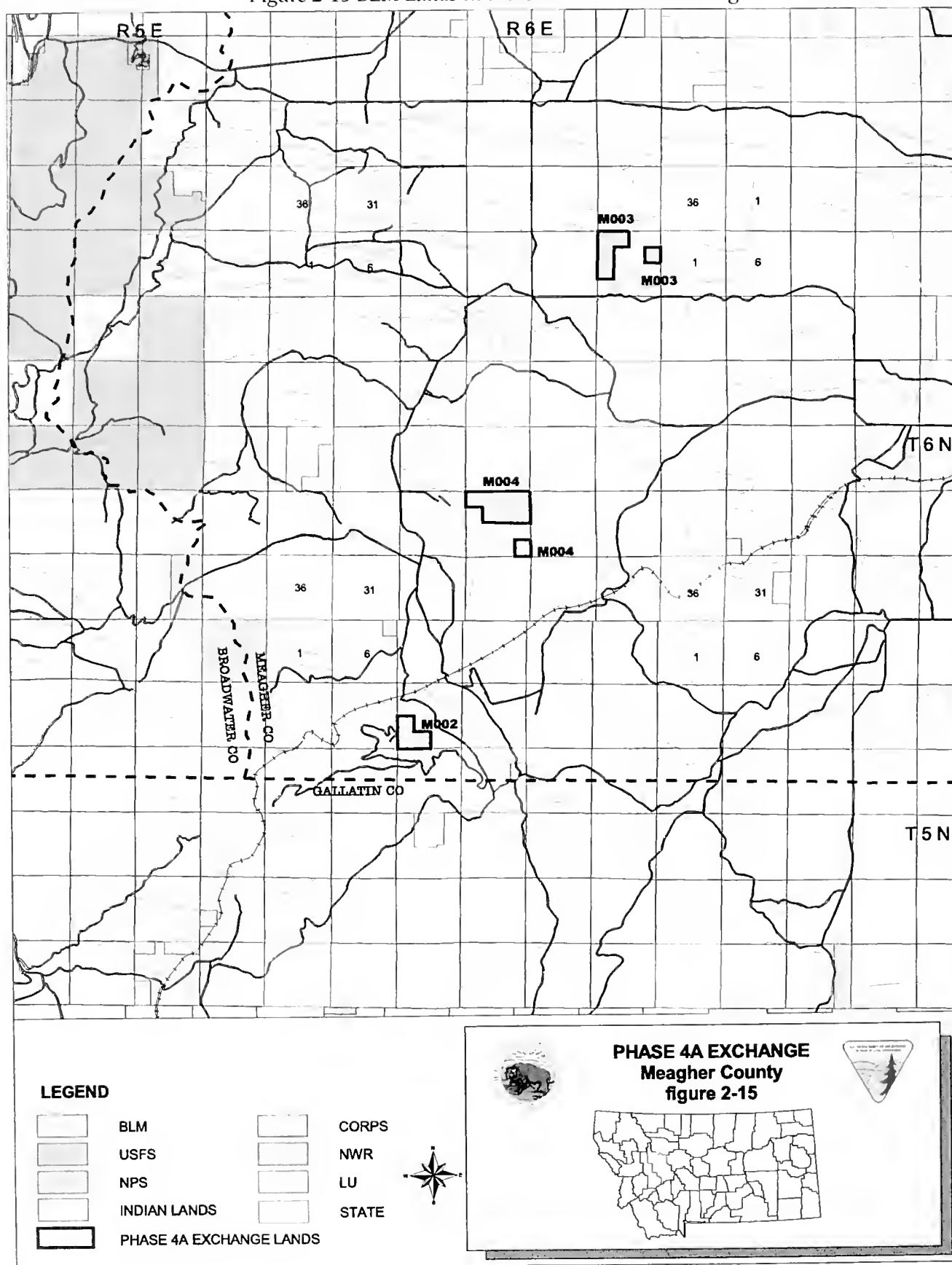


Figure 2-16 BLM Lands in the CBSA Phase 4A Exchange

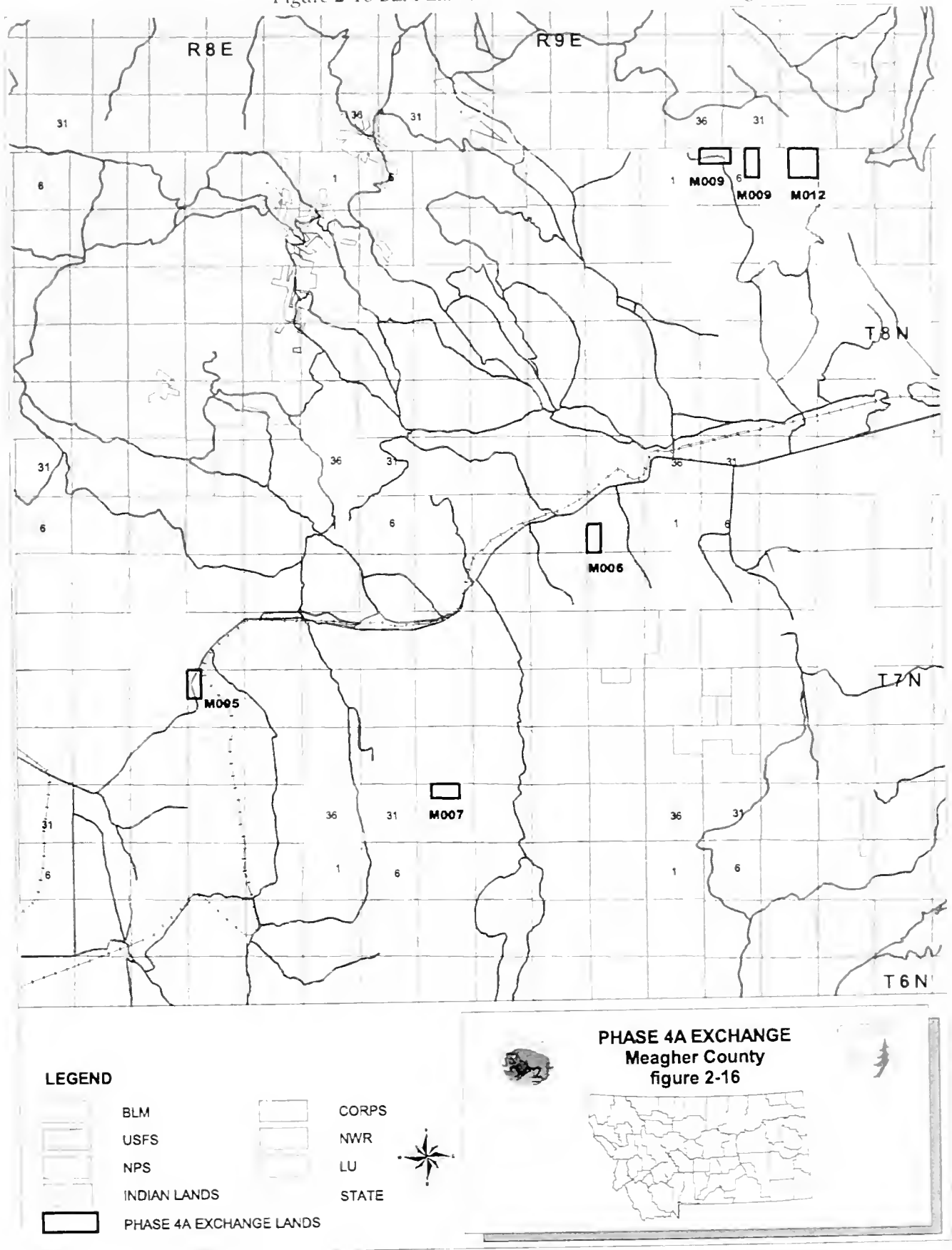


Figure 2-17 BLM Lands in the CBSA Phase 4A Exchange

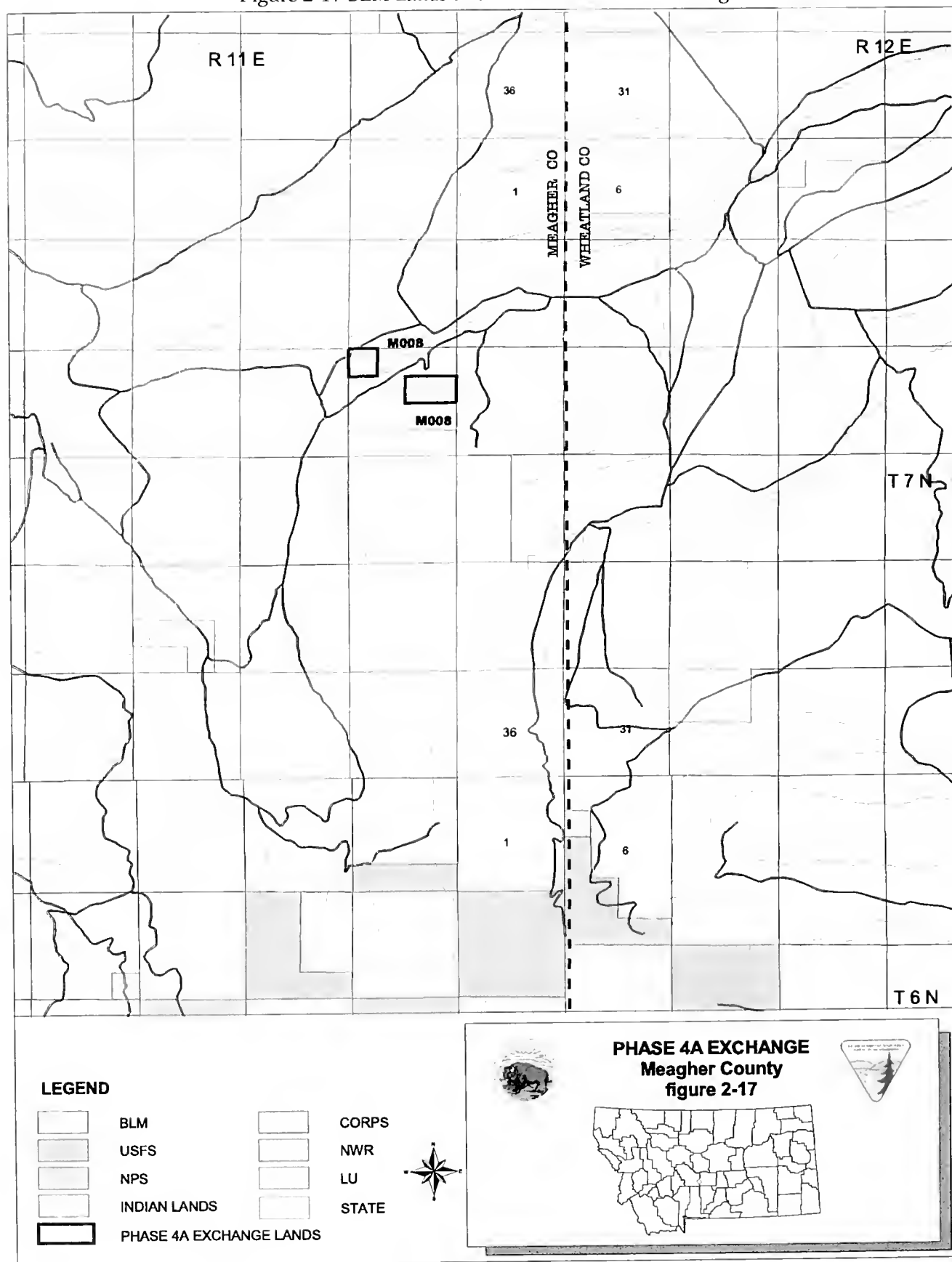


Figure 2-18 BLM Lands in the CBSA Phase 4A Exchange

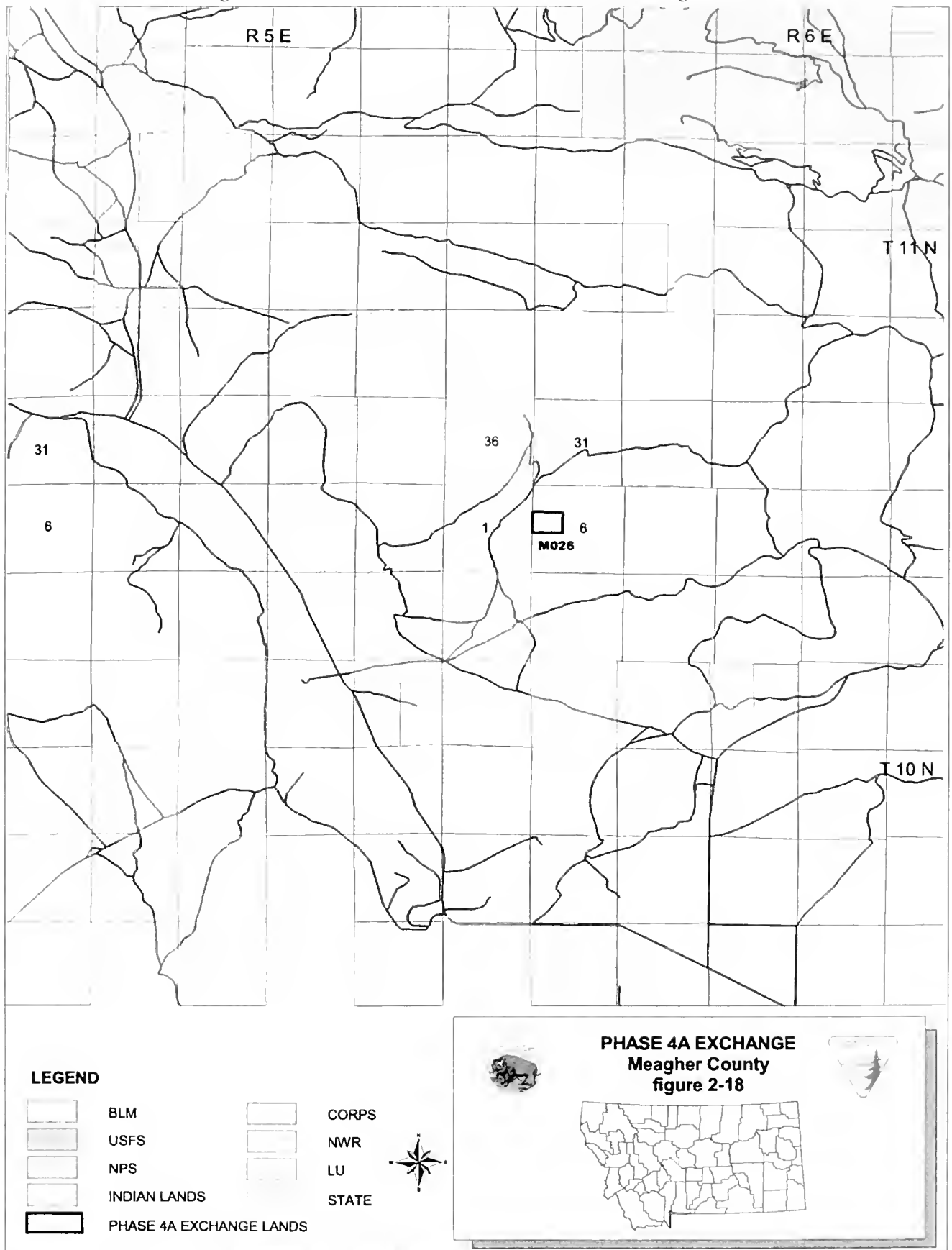


Figure 2-19 BLM Lands in the CBSA Phase 4A Exchange

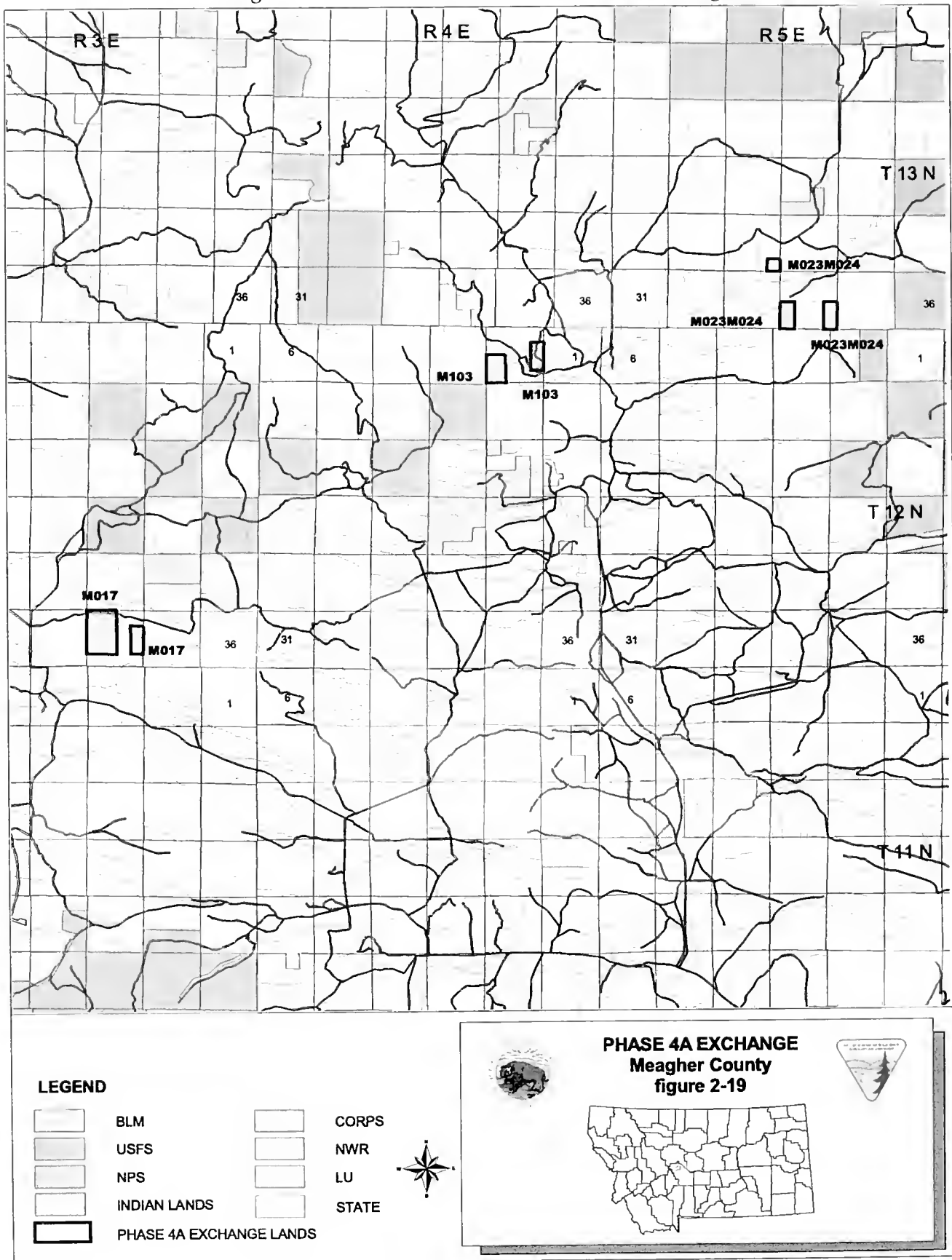


Figure 2-20 BLM Lands in the CBSA Phase 4A Exchange

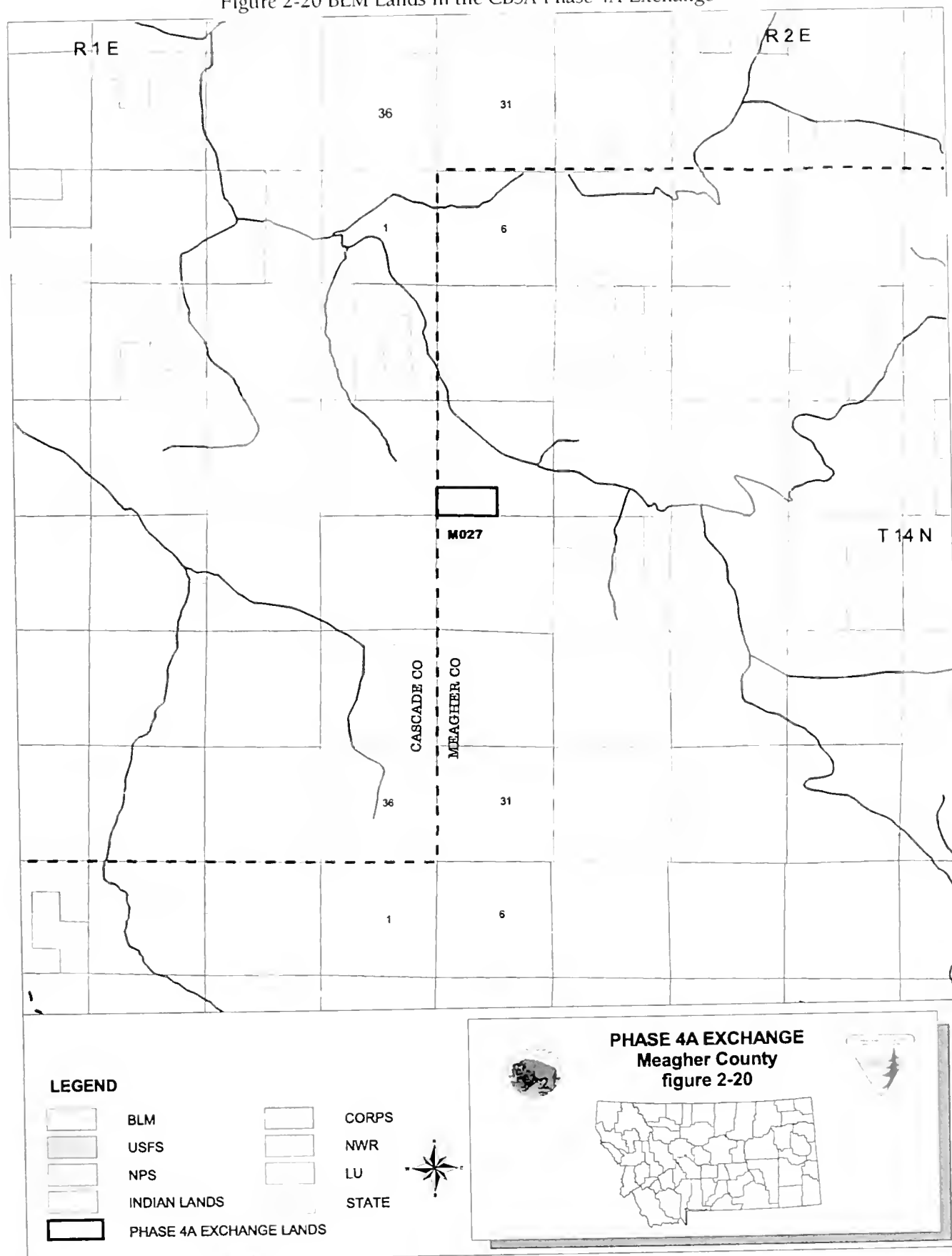
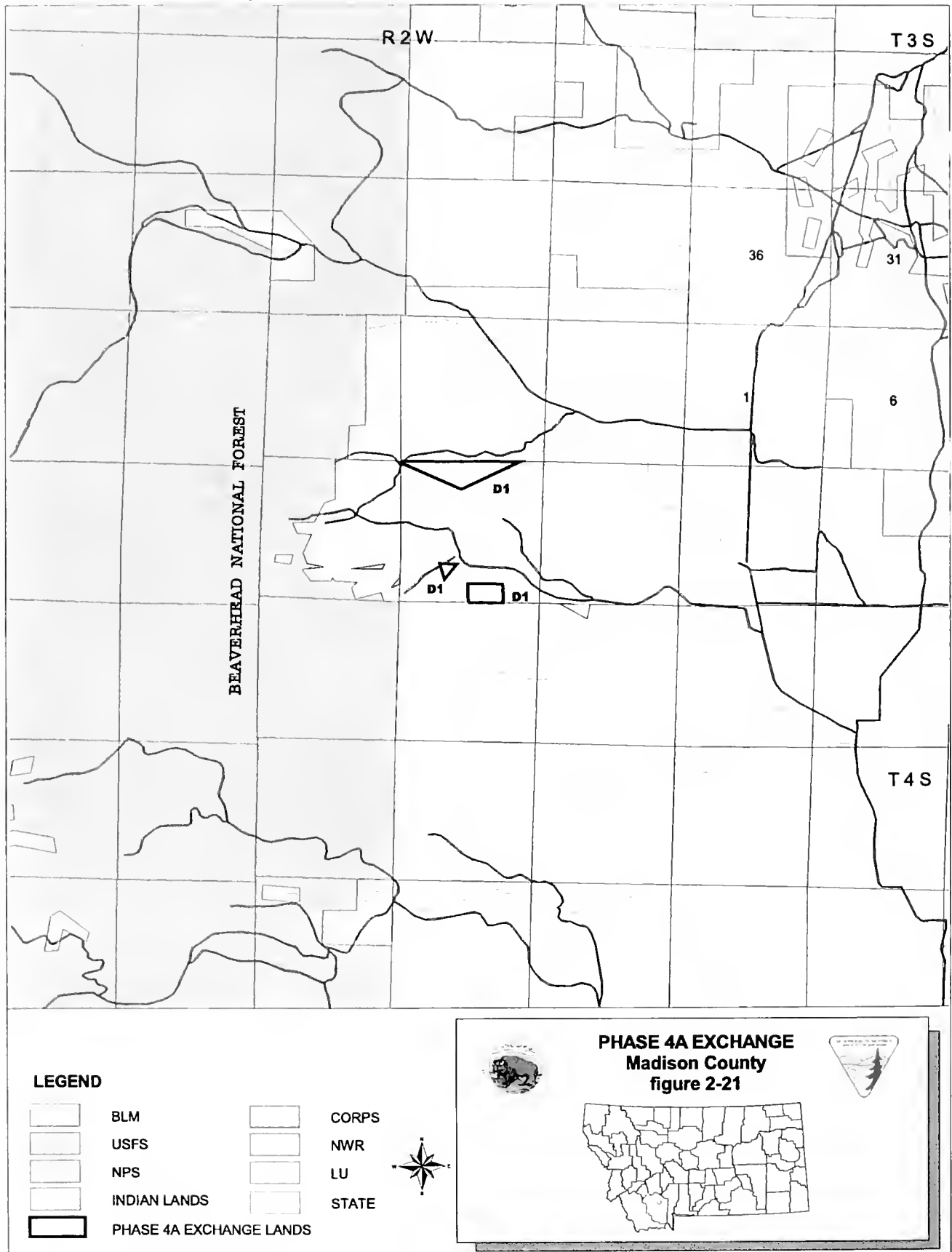


Figure 2-21 BLM Lands in the CBSA Phase 4A Exchange



3.0 AFFECTED ENVIRONMENT

This chapter describes the portions of the physical, biological, social and economic environments that would be affected by the implementation of the alternatives for the proposed exchange. This chapter presents the existing conditions as a baseline for the analysis of potential impacts that are examined in Chapter 4. Chapter 3 also includes a description of conditions for the BLM tract in Appendix A which had not previously been specifically identified for disposal in the West HiLine Resource Management Plan.

3.1 BLM Lands

3.1.1 General Geography, Topography and Aesthetics

The BLM lands in the Phase 4A exchange fall within a variety of diverse landscapes. Table 3-1 summarizes some of these diverse characteristics of the BLM tracts and allows for a general comparison between the lands.

Table 3-1 General Geography, Topography and Aesthetics of BLM Lands in Phase 4A of the Crow Boundary Settlement Act Land Exchange Project

Parcel Number	County	Landscape Position ⁴	Topography ⁵	View ⁶	Scenery ⁷
F005	Fergus	Upland	Badland	Expansive	Sage
F021	Fergus	Intermediate	Badland	Wide	Mixed
F085	Fergus	Upland	Rolling (steep)	Expansive	Sage
F102	Fergus	Upland	Broken	Open	Timber
F114	Fergus	Upland	Broken	Open	Mixed
F171	Fergus	Upland	Broken	Open	Mixed
F200	Fergus	Upland	Rolling	Expansive	Prairie
F201	Fergus	Upland	Rolling	Wide	Sage
F204	Fergus	Upland	Broken	Expansive	Prairie
HC012	Choteau	Upland	Broken	Wide	Prairie
HC049	Choteau	Upland	Broken	Wide	Sage
HC051	Choteau	Upland	Dissected	Wide	Sage
HC057	Choteau	Upland	Dissected	Wide	Sage
HC062	Choteau	Upland	Badland	Open	Sage

⁴ Landscape position is described in broad terms relative to major drainages (Yellowstone, Musselshell, Powder rivers, e.g.) and intervening divides. This characteristic is divided into Lowland (floodplain or terraces near the primary drainage), Intermediate (lands between Lowland and Upland), and Upland.

⁵ Topography is divided into categories of increasing drainage density and roughness of terrain using descriptive terms like Flat, Rolling, Broken, Dissected, and Badland

⁶ If views are typically 10-20 miles, they are termed Expansive; 5-10 miles, Wide; 1-5 miles, Open, less than a mile, Narrow; and less than 200 yards, Closed.

⁷ Scenery depicts the typical vegetation at this site. Sage denotes sagebrush and grass mixed, Prairie denotes mostly grassland, Mixed means mixed scattered trees, grass and/or sagebrush, and Timber denotes most views are of timber stands.

**Table 3-1 General Geography, Topography and Acsthetics of BLM Lands in Phase 4A
of the Crow Boundary Settlement Act Land Exchange Project**

Parcel Number	County	Landscape Position ⁴	Topography ⁵	View ⁶	Scenery ⁷
HC074	Choteau	Lowland	Flat	Open	Mixed
H001	Hill	Upland	Rolling	Expansive	Prairie
H005	Hill	Upland	Flat	Expansive	Prairie
H016	Hill	Upland	Flat	Expansive	Prairie
B021	Blaine	Upland	Rolling	Expansive	Prairie
B029	Blaine	Upland	Rolling	Wide	Mixed
B030	Blaine	Upland	Rolling	Expansive	Mixed
B032	Blaine	Upland	Rolling (steep)	Expansive	Mixed
B033	Blaine	Upland	Flat to Rolling	Expansive	Sage
B035	Blaine	Upland	Rolling	Wide	Mixed
B036	Blaine	Upland	Flat	Wide	Mixed
B037	Blaine	Upland	Rolling	Wide	Prairie
B038	Blaine	Upland	Flat	Wide	Prairie
B039	Blaine	Upland	Broken	Wide	Prairie
B040	Blaine	Upland	Broken	Wide	Prairie
B041	Blaine	Upland	Broken	Wide	Prairie
B065	Blaine	Upland	Rolling	Wide	Mixed
B072	Blaine	Upland	Flat to Rolling	Wide	Prairie
T003	Toole	Intermediate	Rolling	Open	Prairie
T004	Toole	Intermediate	Rolling(steep)	Open	Prairie
T009	Toole	Upland	Flat	Wide	Prairie
T015	Toole	Upland	Flat	Expansive	Prairie
M002	Meagher	Upland	Rolling(steep)	Open	Mixed
M003	Meagher	Upland	Rolling	Wide	Sage
M004	Meagher	Upland	Broken	Open	Prairie
M005	Meagher	Upland	Rolling(steep)	Open	Prairie
M006	Meagher	Upland	Broken	Open	Sage
M007	Meagher	Upland	Rolling	Wide	Prairie
M008	Meagher	Upland	Rolling(some steep)	Wide	Prairie
M009	Meagher	Upland	Rolling to Broken	Wide	Mixed
M012	Meagher	Upland	Broken	Wide	Mixed
M017	Meagher	Upland	Rolling(steep)	Open	Mixed
M023	Meagher	Upland	Rolling	Open	Sage
M024	Meagher	Upland	Rolling to Broken	Open	Mixed
M026	Meagher	Upland	Broken	Open	Mixed
M027	Meagher	Upland	Rolling(steep)	Wide	Sage
M103	Meagher	Intermediate	Rolling to Broken	Open	Timber
D1	Madison	Intermediate	Rolling	Wide	Sage

3.1.2 Climate

The climate on the BLM lands is semiarid and continental, with cold winters and warm to hot summers. Climatic information on the parcels can be inferred from climatic data collected in nearby communities. Table 3-2 provides climatic summary information for these areas.

The data suggests that temperatures are slightly cooler and precipitation is slightly less the farther north the data are collected. Generally the higher the elevation, the cooler and wetter the climate will be. However, for purposes of this Environmental Assessment, the BLM lands may be considered to have essentially the same climatic characteristics as the nearest communities depicted in Table 3-2.

Most of the summer precipitation occurs in showers or thunderstorms, with occasional steady rains during late spring or early summer. June is the month of highest precipitation at all selected stations and February is the month of lowest precipitation. Precipitation generally falls as snow during late fall, winter, and early spring, although rain can occur in any month. Late spring, summer, and early fall precipitation is almost always rain, but hail is observed frequently during summer thunderstorms. Although precipitation is not plentiful, it mainly occurs during the growing season and is conducive to the growth of herbaceous rangeland species and some deciduous and evergreen trees on the BLM lands.

3.1.3 Groundwater, Geology and Mineral Potential

The BLM lands are underlain by one or more of four general aquifer types, or by formations not generally considered aquifers. The four general types of aquifers are surficial deposits, and aquifers in Cenezoic, Mesozoic, and Paleozoic rocks.⁸ Surficial deposits include alluvium, fluvial-glacial gravels, terrace gravels, and Flaxville Formation gravels or equivalents (Tertiary sand and gravel). Table 3-3 summarizes the geology and mineral potential of the BLM lands.

The Fort Union Formation is the most significant Cenezoic aquifer in the eastern part of the State, but only a small amount of this formation affects the BLM exchange lands. The Fort Union Formation thins along the edges, where older, Mesozoic rocks are exposed. Mesozoic aquifers important to the BLM lands in this exchange include the Hell Creek (also locally called Lance) Formation, the Fox Hills Sandstone, the Judith River Formation, and the Eagle Formation. Generally water in these aquifers is confined or "artesian" and water quality is highly variable, generally being best close to recharge zones where the formation is exposed.

The only significant Paleozoic aquifer involving the exchange lands is the massive limestone Madison Group aquifer, which is exposed in the Little Belt and Big Snowy mountains (a recharge zone) and underlies all of eastern Montana at considerable depth.

Table 3-2 Selected Climatic Data Summary for the BLM Lands

Characteristic	Winifred	Lewistown	White Sulphur Springs	Fort Benton	Havre
January Avg. Temp. (Max./Min. in °F)	29.0/5.6	32.4/9.9	30.5/10.5	31.5/7.5	24.3/3.1
July Avg. Temp. (Max./Min. in °F)	84.0/51.4	81.2/49.4	80.9/47.9	85.7/52.4	84.4/53.5
Avg. Total Precipitation (in.)	15.00	18.50	15.12	14.27	11.35

⁸ Montana Ground Water Atlas, (1998) Montana State Library, Natural Resource Information System. Typical groundwater production potential and water quality based on total dissolved solids can also be found in the Montana Ground Water Atlas.

**Table 3-3 Geology and Mineral Potential of BLM Lands in the
Phase 4A Crow Boundary Settlement Act Exchange**

Parcel Number	County	Geologic Formation ⁹	Mineral Potential ¹⁰
F005	Fergus	Judith River Formation	Coal
F021	Fergus	Eagle Sandstone	NA
F085	Fergus	Hell Creek Formation	NA
F102	Fergus	Tertiary coarse-grained intrusive rocks	Coal
F114	Fergus	Claggett Formation	NA
F171	Fergus	Mississippian, undifferentiated	NA
F200	Fergus	Bearpaw Shale	NA
F201	Fergus	Bearpaw Shale	NA
F204	Fergus	Mississippian, undifferentiated	NA
HC012	Choteau	Eagle Sandstone/Claggett Formation	Oil & Gas
HC049	Choteau	Eagle Sandstone	Coal
HC051	Choteau	Eagle Sandstone	Coal
HC057	Choteau	Colorado Shale	NA
HC062	Choteau	Eagle Sandstone	Coal
HC074	Choteau	Eagle Sandstone	NA
H001	Hill	Colorado Shale	NA
H005	Hill	Bearpaw Shale	NA
H016	Hill	Bearpaw Shale	Coal
B021	Blaine	Judith River Formation	Coal
B029	Blaine	Bearpaw Shale	NA
B030	Blaine	Bearpaw Shale	NA
B032	Blaine	Tertiary coarse-grained intrusive rocks	NA
B033	Blaine	Colorado Shale	NA
B035	Blaine	Bearpaw Shale	NA
B036	Blaine	Judith River Formation	NA
B037	Blaine	Judith River Formation	NA
B038	Blaine	Berpaw Shale	NA
B039	Blaine	Judith River Formation	NA
B040	Blaine	Bearpaw Shale	Oil & Gas
B041	Blaine	Judith River Formation	Oil & Gas
B065	Blaine	Judith River Formation	NA
B072	Blaine	Judith River Formartion	Coal
T003	Toole	Colorado Shale	NA
T004	Toole	Colorado Shale	NA
T009	Toole	Colorado Shale	Oil & Gas
T015	Toole	Colorado Shale	Oil & Gas
M002	Meagher	Cambrian, undifferentiated	NA
M003	Meagher	Tertiary sedimentary rocks, undifferentiated	NA
M004	Meagher	Spokane Shale	NA
M005	Meagher	Livingston Formation	Mineral Material
M006	Meagher	Livingston Formation	NA
M007	Meagher	Livingston Formation	NA
M008	Meagher	Colorado Shale	NA
M009	Meagher	Jurassic, undifferentiated	NA
M012	Meagher	Pennsylvanian, undifferentiated	NA
M017	Meagher	Mississippian, undifferentiated	NA

**Table 3-3 Geology and Mineral Potential of BLM Lands in the
Phase 4A Crow Boundary Settlement Act Exchange**

Parcel Number	County	Geologic Formation ⁹	Mineral Potential ¹⁰
M023	Meagher	Cambrian, undifferentiated	NA
M024	Meagher	Cambrian, undifferentiated	NA
M026	Meagher	Piegan Group	NA
M027	Meagher	Mississippian, undifferentiated	NA
M103	Meagher	Cambrian, undifferentiated	NA
D1	Madison	Pre-Belt gneiss, schist, and related rocks	NA

Ten of the parcels (HC012, H005, H016, B029, B030, B040, B041, T003, T015, and M027) currently have oil and gas leases on them. The mineral estate, however, will not be disposed and will remain in federal ownership.

In addition to the geology listed in Table 3-3, BLM lands in Blaine and Hill counties have a veneer of deposits left by glaciation or previous cataclysmic events, which generally obscure the underlying bedrock geology.

The mineral estate for the BLM lands will be retained by BLM and will not be exchanged. A review of BLM mining claims recordation data revealed no mining claims on the BLM tracts. The mineral report prepared by the BLM for this exchange concludes:

The conveyance lands have occurrence potential for oil, gas, coal and mineral materials resources. Development potential for oil and gas ranges from low to high. High oil and gas development potential exists on tracts located in Blaine, Chouteau, Hill and Toole Counties. The oil and gas rights would remain with the United States and the exercise of surface rights would not interfere with operations under the Mineral Leasing Act.

Several tracts have occurrence potential for coal resources. There are no reported exposures and mining has not been known to have occurred on any of the tracts. Development potential is considered low. Coalbed methane could potentially occur on those tracts as well, however, the potential for development is unknown.

Mineral materials resources are abundant throughout the region and have the potential for occurrence on several of the tracts. Development of any mineral material resources on the tracts, however, would be demand-driven and permitting is discretionary. There are no areas of high demand on any of the tracts for mineral materials at the present time.

There are no geologic or mineral-related reasons which would preclude the conveyance of surface rights of the subject lands out of federal ownership and it is recommended that the lands be conveyed as proposed. The proposed conveyance would not interfere with operations under the Mineral Leasing Act.

A copy of the mineral report is not included with this Environmental Assessment as minerals are not being exchanged, however, the mineral report is available upon request.

3.1.4 Surface Water Rights

Water rights on BLM lands involved in the Phase 4A Land Exchange are listed in Table 3-4. Water rights denoted with an asterisk (*) are rights that are on the BLM parcel, but are listed in the name of either the current or a previous BLM permittee.

⁹ Geologic information is taken from Geologic Map of Montana provided by the Montana Bureau of Mines and Geology.

¹⁰ Minerals listed have a moderate to high "occurrence potential", but widely varied "development potential". Mineral potential is listed for information only and is based on BLM's mineral report and other Field Office minerals information. No mineral estate will be exchanged.

Table 3-4 Water Rights on BLM Land in the Phase 4A CBSA Exchange

Legal Description	Parcel No.	County	Acres	Water Rights	Use
T29N, R37E, Sec. 12: Lots 9 and 10,					
T22N, R17E Sec. 34: SWNE, NESE, NENWSE	F005	Fergus	90.00	None Listed	
T21N, R17E Sec. 27: SESW Sec. 28: SWSW, SWSE	F021	Fergus	120.00	None Listed	
T18N, R25E Sec. 1: Lots 3, 4, SNW	F085	Fergus	163.44	None Listed	
T16N, R17E Sec. 12: NENE, SNE	F102	Fergus	120.00	None Listed	
T15N, R19E Sec. 2: SESE	F114	Fergus	40.00	None Listed	
T13N, R20E, Sec. 5: SW SE Sec. 9: NE SW Sec. 15: NW NW, SE SE Sec. 22: ENW	F171	Fergus	240.00	40B-W123430-00 (ST 004)*	Stockwater
T19N, R23E Sec. 15: SNE, NSE	F200	Fergus	160.00	None Listed	
T19N, R23E Sec. 13: SW	F201	Fergus	160.00	40C-W062557-00(W1 001) 40C-W062558-00 (ST 001)	Wildlife Stockwater
T13N, R20E Sec. 2: Lot 2	F204	Fergus	39.39	None Listed	
T27N, R16E Sec. 11: NWSE	HC012	Chouteau	40.00	41T-W-047036 41T-W-047037	Stockwater Stockwater
T26N, R11E Sec. 8: SWNE, SNW	HC049	Chouteau	120.00	None Listed	
T26N, R11E Sec. 18: Lot 1	HC051	Chouteau	37.67	41T-W167232-00 (ST 014) 41T-W120096-00 (ST 001)	Stockwater Stockwater
T26N, R9E Sec. 35: NENE	HC057	Chouteau	40.00	None Listed	
T26N, R7E Sec. 11: NENE	HC062	Chouteau	40.00	None Listed	
T28N, R9E Sec. 18: Lot 1	HC074	Chouteau	2.04	41P-Y105759-00 (IR 010)	Irrigation
T37N, R11E Sec. 2: Lots 5, 6, 7, and 8, SWNE	H001	Hill	114.04	None Listed	
T37N, R17E Sec. 7: SESE	H005	Hill	40.00	None Listed	
T37N, R15E Sec. 7: SESE	H016	Hill	40.00	None Listed	
T28N, R22E Sec. 29: NESW	B021	Blaine	40.00	None Listed	
T29N, R21E Sec. 24: SESW	B029	Blaine	40.00	40I-W-027005(SW)	Stockwater
T29N, R21E Sec. 24: SESE	B030	Blaine	40.00	None Listed	
T28N, R19E Sec. 13: SNE, NWSE	B032	Blaine	120.00	None Listed	
T28N, R20E Sec. 30: SESW Sec. 31: Lots 1 & 2, ENW	B033	Blaine	188.30	40EJ-W155157-00 (IR001)*	Irrigation
T28N, R21E Sec. 7: Lot 1, NENW	B035	Blaine	77.06	None Listed	
T28N, R21E Sec. 6: SESE	B036	Blaine	40.00	None Listed	
T28N, R21E Sec. 17: NWSW Sec. 18: NESE	B037	Blaine	80.00	40EJ-W-027022*	Stockwater
T28N, R21E Sec. 17: SSE	B038	Blaine	80.00	None Listed	
T28N, R21E Sec. 19: NWNE	B039	Blaine	40.00	None Listed	
T27N, R17E Sec. 26: SWNW	B040	Blaine	40.00	None Listed	

Table 3-4 Water Rights on BLM Land in the Phase 4A CBSA Exchange

Legal Description	Parcel No.	County	Acres	Water Rights	Use
T27N, R17E Sec. 26: NESW	B041	Blaine	40.00	None Listed	
T27N, R21E Sec. 11: SWNW, NWSW	B065	Blaine	80.00	None Listed	
T27N, R22E Sec. 20: SENW	B072	Blaine	40.00	None Listed	
T31N, R1W Sec. 29: SWSE	T003	Toole	40.00	None Listed	
T31N, R1W Sec. 31: NENE	T004	Toole	40.00	None Listed	
T33N, R3W Sec. 25: SESW	T009	Toole	40.00	None Listed	
T35N, R1W Sec. 30: NENW	T015	Toole	40.00	None Listed	
T5N, R6E Sec. 8: WSW, SESW	M002	Meagher	120.00	None Listed	
T6N, R6E Sec. 2: Lots 3 & 4, SENE, SWNW, NWSW	M003	Meagher	200.01	None Listed	
T6N, R6E Sec. 28: NE, ENW, NWNW, SESE	M004	Meagher	320.00	None Listed	
T7N, R8E Sec. 22: WNW	M005	Meagher	80.00	None Listed	
T7N, R9E Sec. 2: WSW	M006	Meagher	80.00	None Listed	
T7N, R9E Sec. 32: NWNE, NENW	M007	Meagher	80.00	None Listed	
T7N, R11E Sec. 14: SNE, NWNW	M008	Meagher	120.00	40A-W006646-00 (IR 002)* 40A-W207227-00 (IR003)* 40A-W207229-00 (IR 003)* 40A-W207230-00 (IR 003)* 40A-W207231-00 (IR 003)*	Irrigation Irrigation Irrigation Irrigation Irrigation
T8N, R10E Sec. 6: Lots 1, 3, and 4, SENE	M009	Meagher	155.75	None Listed	
T8N, R10E Sec. 5: Lots 1, 2, 5, SWNE	M012	Meagher	170.58	40A-W146037-00 (ST001)* 40A-W146037-00 (ST006)*	Stockwater Stockwater
T12N, R3E Sec. 34: SENE, NW, NSW, NESE	M017	Meagher	320.00	None Listed	
T13N, R5E Sec. 28: SESE	M023	Meagher	40.00	None Listed	
T13N, R5E Sec. 34: WSW, ESE	M024	Meagher	160.00	None Listed	
T10N, R6E Sec. 6: Lot 5	M026	Meagher	49.78	None Listed	
T14N, R2E Sec. 18: Lot 4, SESW	M027	Meagher	81.42	None Listed	
T12N, R4E Sec. 2: SENE, WSW, NESE	M103	Meagher	160.00	41J-W207449-00 (FW022) 41J-W207450-00 (FW022) 41J-W207451-00 (FW022) 41J-W207452-00 (FW022) 41J-P061460-00 (MD001)* 41J-P061460-00 (ST001)* 41J-W078759-00 (W1001) 41J-W078760 (ST001)	Fish & Wildlife Fish & Wildlife Fish & Wildlife Fish & Wildlife Domestic Stockwater Wildlife Stockwater
T4S, R2W Sec. 10: Lots 2, 3, 4, 17, SSW, SE	DI	Madison	71.72	Numerous	Mining, Stockwater, Irrigation

3.1.5 Vegetation

The Montana Vegetation Types map¹¹ was utilized to determine the general vegetative types for the BLM lands involved in this exchange proposal.

Table 3-5 indicates parcels within each vegetative type and typical species. While this table provides a description of vegetation that might be expected on each tract, it does not account for vegetative diversity that occurs within the vegetation types and should not be considered a detailed inventory of the vegetation on each tract or parcel.

Table 3-5 Vegetative Type Characteristics of BLM Lands
(Species in bold type are distinguishing species)

Foothill Grassland				
Tracts	Grasses	Forbs	Shrubs	Trees
B029, B030, B032, B033, B035, B036, B037, B038, B039, B065, M002, M003, M004, M005, M006, M007, M008, M009, M012, M017, M023, M024, M026, M027	Bluebunch wheatgrass Western wheatgrass Idaho fescue Sheep fescue Needle-and-thread Mountain brome Pumpelly brome Thickspike wheatgrass Bluegrass Sandberg bluegrass Prairie junegrass Green needlegrass Blue grama	Western yarrow Clubmoss Lupine Phlox	Douglas hawthorne Saskatoon serviceberry Western chokecherry Russet buffaloberry Rose	Quaking aspen
Teton River-Judith Basin Grassland				
Tracts	Grasses	Forbs	Shrubs	Trees
F005, HC062, HC074	Sandberg bluegrass Prairie junegrass Blue grama Needle-and-thread Western wheatgrass Bluebunch wheatgrass Needleleaf Sedge Threadleaf Sedge	Fringed Sagewort	Absent or Occasional	Absent or Occasional
Northern Grassland				
Tracts	Grasses	Forbs	Shrubs	Trees
HC049, HC051, HC057, H001, H005, H016, B021, B072, T003, T004, T009, T015	Blue grama Western wheatgrass Sedges Needleleaf sedge Needle-and-thread Prairie Junegrass Plains reedgrass Threadleaf sedge	Clubmoss Fringed Sagewort	Absent or occasional	Absent or occasional

¹¹ Payne, G.E, 1973 Vegetative Rangeland Types in Montana, Montana Agricultural Experiment Station, Montana State University, Bozeman.

Table 3-5 Vegetative Type Characteristics of BLM Lands
(Species in bold type are distinguishing species)

Missouri Breaks Scrub-Pine				
Tracts	Grasses	Forbs	Shrubs	Trees
F021	Plains Muhly Bluebunch wheatgrass Blue Grama Western wheatgrass Little bluestem Sandberg Bluegrass Threadleaf sedge	Phlox Wild buckwheat	Sagebrush Rabbitbrush Yucca Plains pricklypear	Ponderosa pine Juniper
Central Grassland				
Tracts	Grasses	Forbs	Shrubs	Trees
F085, F200, F201	Blue grama Western wheatgrass Needle-and-thread Sandberg bluegrass Green Needlegrass Bluebunch Wheatgrass Plains reedgrass Prairie junegrass Plains muhly Threadleaf sedge Needleleaf sedge	Fringed sagewort Broom snakeweed Phlox Wild buckwheat Scarlet globmallow	Sagebrush Plains pricklypear	Absent or Occasional
Eastern Montana Ponderosa Pine Forest				
Tracts	Grasses	Forbs	Shrubs	Trees
F114, F171, F204	Needle-and-thread Blue grama Little bluestem Idaho fescue Western wheatgrass Prairie junegrass Sandberg bluegrass Bluebunch Wheatgrass Sideoats grama Threadleaf sedge Needleleaf sedge Bluegrass	Phlox Wild buckwheat Lupine	Skunkbush sumac Western snowberry	Ponderosa pine Rocky Mtn juniper

Table 3-5 Vegetative Type Characteristics of BLM Lands
(Species in bold type are distinguishing species)

Foothill Sagebrush

Tracts	Grasses	Forbs	Shrubs	Trees
D1	Idaho fescue Blue grama Slender wheatgrass Needlegrass Prairie junegrass Canby bluegrass Indian ricegrass Threadleaf sedge Bluebunch wheatgrass	Rose pussytoes Douglas phlox Sulphur wild buckwheat Spreading fleabane Ballhead sandwort	Sagebrush Douglas rabbitbrush Rubber rabbitbrush Fringed sagewort Broom snakeweed	Absent or occasional

Lodgepole Pine-Douglas Fir Forest

Tracts	Grasses	Forbs	Shrubs	Trees
F102, HC012, B040, B041, M103	Pine reedgrass Elk sedge Bluegrass	Showy Aster	Big whortleberry Shinyleaf spirea Rose spirea Utah honeysuckle Grouse whortleberry	Lodgepole pine Douglas fir

3.1.5.1 Rare Plants

No threatened or endangered plants are known to exist on the parcels of BLM lands being considered for exchange. No inventories have been conducted on most or all of these tracts so no sensitive plant species were detected during a Natural Heritage Program data search. However, in some cases, rare or sensitive plants may exist or have historically existed nearby the lands being proposed for exchange, which may include similar habitat with potential for these rare plants.

3.1.5.2 Noxious Weeds

Noxious weed infestations are known to occur on some BLM tracts. M004 and M005 have spotted knapweed and scotch thistle on them, HC074 has russian knapweed, and there is known to be leafy spurge on private lands adjacent to parcels T003 and T004. Some of the private land in the area of other BLM tracts may also have noxious weed infestations and it is likely that some of those weeds have or soon will spread onto the BLM tracts. For those BLM tracts

which have public road access, noxious weeds are a high probability. Weeds may be present on other BLM tracts, but have not been formally documented.

3.1.6 Wildlife Habitat and Fisheries

Almost all of the BLM land would be considered good habitat for some of the usual wildlife species common to northern and central Montana. These species would include big game, such as mule deer and white-tailed deer on the tracts with brush, juniper, and ponderosa pine cover, and pronghorn antelope on the more open grassy tracts. Some BLM tracts in Chouteau and Fergus Counties also have elk habitat on them. All tracts have various small mammals such as coyote, bobcat, raccoon, porcupine, and other smaller mammals. Birds, ranging from neotropical migrants, upland game birds (particularly sharp-tailed and sage grouse), and raptors probably commonly use these lands to some degree. Table 3-6 is intended to provide information about these lands where special

circumstances should be noted. Information in regards to Threatened and Endangered Species and Sensitive Species was obtained from the Montana Natural Heritage Program and indicates that habitat for certain species is in the general area of the BLM tracts but does not indicate that those tracts provide critical habitat for those species. Where necessary, these circumstances are discussed in more detail

following Table 3-6. Appendix C contains a list of U.S. Fish and Wildlife Service candidate, threatened and endangered species, BLM sensitive species, and BLM watch species that have some probability of occurring in the area of the exchange tracts. There are no known significant fisheries on any of the BLM tracts. Neotropical migrants also utilize many of the tracts periodically.

**Table 3-6 Wildlife and Habitat on BLM Lands in the Phase 4A
Crow Boundary Settlement Act Land Exchange**

Parcel Number	County	Crucial Big Game Habitat	T&E Species Concerns	Sensitive Species Concerns	Riparian/Wetlands
F005	Fergus	No	No	No	No
F021	Fergus	No	No	No	No
F085	Fergus	No	No	Ferruginous Hawk Habitat	No
F102	Fergus	No	No	No	No
F114	Fergus	No	No	No	No
F171	Fergus	No	No	No	No
F200	Fergus	No	No	Ferruginous Hawk Habitat	Portion of small ephemeral pond in SW corner of tract
F201	Fergus	No	No	Ferruginous Hawk Habitat	Small ephemeral pond/reservoir in SE corner of tract
F204	Fergus	No	No	No	No
HC012	Choteau	No	No	No	No
HC049	Choteau	No	No	No	No
HC051	Choteau	No	No	No	No
HC057	Choteau	No	No	No	No
HC062	Choteau	No	No	Ferruginous Hawk Habitat	No
HC074	Choteau	No	Possible Bald Eagle Foraging Area	No	Yes (about 900 feet of Marias River frontage)
H001	Hill	No	No	No	No
H005	Hill	No	Possible Swift Fox Habitat	Possible Baird's Sparrow and Long-billed Curlew Habitat	No
H016	Hill	No	Possible Swift Fox Habitat	Possible Loggerhead Shrike, Baird's Sparrow, Long-billed Curlew, and Sage Grouse Habitat	No
B021	Blaine	No	Possible Swift Fox Habitat	Possible Long-billed Curlew Habitat	No
B029	Blaine	No	No	No	No
B030	Blaine	No	No	No	No
B032	Blaine	No	Possible Swift Fox Habitat	No	No
B033	Blaine	No	Possible Mountain Plover and Swift Fox Habitat	Possible Long-billed Curlew Habitat	No

**Table 3-6 Wildlife and Habitat on BLM Lands in the Phase 4A
Crow Boundary Settlement Act Land Exchange**

Parcel Number	County	Crucial Big Game Habitat	T&E Species Concerns	Sensitive Species Concerns	Riparian/Wetlands
B035	Blaine	No	No	No	No
B036	Blaine	No	No	No	No
B037	Blaine	No	No	No	No
B038	Blaine	No	No	No	No
B039	Blaine	No	No	No	No
B040	Blaine	No	No	No	No
B041	Blaine	No	No	No	No
B065	Blaine	No	No	Sage Grouse Habitat	No
B072	Blaine	No	Possible Swift Fox Habitat	Possible Baird's Sparrow and Long-billed Curlew Habitat	No
T003	Toole	No	No	No	No
T004	Toole	No	Possible Mountain Plover Habitat	No	No
T009	Toole	No	Possible Mountain Plover Habitat	No	No
T015	Toole	No	No	No	No
M002	Meagher	No	No	No	No
M003	Meagher	No	No	No	Yes (about quarter mile of Battle Creek crosses the forty in the SENE of sec. 2)
M004	Meagher	No	No	No	No
M005	Meagher	No	No	No	No
M006	Meagher	No	No	No	No
M007	Meagher	No	No	No	No
M008	Meagher	No	No	No	Yes (about 200 yards of Little Elk Creek crosses SE corner of the NWNW of sec. 14)
M009	Meagher	Elk winter/spring concentration area	No	Periphery of Possible Lynx Habitat	No
M012	Meagher	Elk winter/spring concentration area	No	Periphery of Possible Lynx Habitat	No
M017	Meagher	Mule Deer winter/spring concentration area	No	No	No
M023	Meagher	No	No	Periphery of Possible Lynx Habitat	No
M024	Meagher	No	No	Periphery of Possible Lynx Habitat	Yes (about quarter mile of Eagle Creek crosses the W2SW of Sec. 34)
M026	Meagher	No	No	No	No
M027	Meagher	No	No	No	No
M103	Meagher	Elk winter/spring concentration area	No	Periphery of Possible Lynx Habitat	No
D1	Madison	No	No	No	No

3.1.6.1 Blaine County Wildlife

Two of the Blaine County tracts (B021 and B072) are located within a native shortgrass prairie habitat with springs, coulees, lotic riparian brush communities, prairie potholes, and healthy sagebrush communities. This prairie habitat is crucial for many neotropical migrants and has been identified as one of the fastest declining habitat types in North America. These tracts are often isolated within large blocks of private and State rangeland, pasture land, Conservation Reserve Program (CRP) land, and grain fields. Land within these areas often contain high value habitat for waterfowl, mule and white-tail deer, pronghorn antelope, sharptail grouse, sage grouse(species of concern), ferruginous hawk(species of concern), Swainsons hawk, long-billed curlew, loggerhead shrike(species of concern), and many other species dependant on this habitat type.

Most of the BLM tracts which are located near the center of the southern half of the County (B029, B030, B032, B033, B035, B036, B037, B038, B039, and B065) are in a Foothill Grassland vegetative type which consists of terrain with more relief and somewhat more rugged than that in the northern half of the County. Mule deer, pronghorn antelope, sharptail grouse, and numerous other birds and small mammals inhabit these tracts.

The two remaining Blaine County tracts (B040 and B041) are located in a Lodgepole Pine-Douglas Fir vegetative type which has grasslands and sagebrush interspersed with sparsely scattered Lodgepole Pine and Douglas Fir stands. The terrain on these tracts is somewhat rough or broken and provide habitat for mule deer, sharptail grouse and possibly some elk.

According to information received from the Montana Natural Heritage Program, some BLM parcels (B021, B032, B033, and B072) have potential for swift fox(candidate for listing) habitat and parcel B033 also has potential for mountain plover(proposed threatened) habitat. Parcel B065 has sage grouse habitat on it and parcels B032 and B072 have habitat for the long-billed curlew. Parcel B072 also has habitat for Baird's sparrow. However, even though these parcels are within the general range of habitat for those species, none of those species have been

recorded on the BLM tracts nor do the BLM tracts provide crucial habitat for those species.

3.1.6.2 Chouteau County Wildlife

Most of the BLM exchange parcels in Chouteau County are in areas which have significant relief and some (HC051, HC057, and HC062) have fairly rugged terrain. The big game species on these tracts consist mainly of mule deer and some pronghorn antelope. Upland game birds can be found on nearby adjacent lands in the area which may have gentler rolling terrain. Coyotes and other local animal and bird species also utilize these tracts. Parcel HC062 has an abandoned bird of prey nest located on it.

Parcel HC074 is adjacent to the Marias River and is quite small (2.04 acres) but it does have some habitat for neotropical birds and game birds. The few cottonwood trees on or adjacent to the tract are likely used periodically by bald eagles or raptors foraging for food in that area. Mule deer and white-tailed deer use the tract on an intermittent basis. However, there is no crucial habitat on the tract for any species. There are fisheries in the Marias River, but they likely would not be affected by the disposal of the tract due to its small size.

3.1.6.3 Toole County Wildlife

The four BLM parcels in Toole County are in the area of Shelby (T003 and T004 are south of Shelby and T009 and T015 are north of Shelby) and they are all within the northern grassland vegetative type. These tracts provide some habitat for mule deer and pronghorn antelope as well as local species of birds and small animals, but no critical or crucial habitat for wildlife.

3.1.6.4 Fergus County Wildlife

Two of the parcels in northern Fergus County (F005 and F021) provide "breaks" habitat and are in an area which has ponderosa pine coulees and scattered sagebrush/grass flats, interspersed with barren clay slopes and knobs. These parcels provide good habitat

for mule deer and may be utilized by elk on an occasional basis even though those specific areas have not been designated as "elk habitat."

Parcel F102 is within a Ponderosa Pine/Douglas Fir vegetative type and parcels F114, F171, and F204 are within an Eastern Montanan Ponderosa Pine Forest vegetative type. Parcel F114 is mostly forested and is located in timbered foothills at the south end of the Judith Mountains about ten miles east of Lewistown, Montana. This forest vegetation, which is merchantable, consists primarily of ponderosa pine, Douglas fir and small patches of stunted aspen that are being taken over by the conifers. Parcels F171 and F204 are located about 12 to 15 miles southeast of Lewistown and have timber on them, however, the timber on F204 has been determined to be unmerchantable. Parcel F102 is about 8 miles north northwest of Lewistown and it has merchantable timber on it. All of the parcels have good habitat for elk, white-tailed deer, black bear, mule deer, and possibly wild turkey. These parcels also provide habitat for blue grouse and various raptors as well as neotropical migrants. Nearly all of these parcels are fairly small in size and none of them have been classified as crucial or critical habitat for any wildlife species.

Parcels F085, F200, and F201 are in the northeastern part of Fergus County in an area which has rolling terrain and a shortgrass prairie/sagebrush vegetative type. The habitat on these parcels is primarily suitable for sage grouse and antelope. There are known sage grouse leks on nearby adjacent lands, but none known to be on the BLM lands. Other local birds and various small animals also utilize these tracts.

3.1.6.5 Meagher County Wildlife

All of the Meagher County tracts are within a Foothill Grassland vegetative type except M103 which is in a Lodgepole Pine-Douglas Fir vegetative type. Most of those tracts which are in the Foothill Grassland vegetative type predominantly consist of various grasses and sagebrush, however, some of those tracts (M002, M009, M012, M017, M023, and M024) also have juniper trees and sparse stands of Douglas Fir trees on them. These tracts generally have rolling to

steep topography. Some of the parcels (M009, M012, and M103) are within significant elk winter/spring concentration areas and parcel M017 is within a major mule deer winter/spring concentration area. Parcels M004 and M005 are within about three miles of inactive sage grouse leks and although they have habitat suitable for sage grouse use, the habitat does not appear to be suitable for sage grouse nesting purposes. None of the aforementioned parcels have been classified as crucial or critical habitat for any wildlife species.

As shown in Table 3-6, perennial streams flow through three of the Meagher County parcels (M003, M008, and M024). However, only short reaches (about a quarter mile and less) of those perennial streams would be involved in the disposal action. There likely is some trout habitat and minimal fisheries present in those streams.

The remainder of the parcels in Meagher County (M007, M026, and M027) do not appear to have significant habitat for wildlife but it is likely they are utilized to some degree by deer, antelope and other local species of animals and birds.

3.1.6.6 Hill County Wildlife

There are three small parcels located in Hill County. These parcels consist of prairie grasslands with mostly flat to rolling terrain. Parcel H005 is grassland with dry cropland and CRP on two sides of it. Parcel H001, which is located adjacent to the U.S.- Canadian border, has dry cropland on the U.S. side and grassland on the Canadian side. There is limited wildlife use of these parcels by birds, pronghorn antelope, and occasional deer.

3.1.6.7 Madison County Wildlife

The parcel in Madison County actually consists of three small tracts of BLM land scattered among private land which has been subdivided for residential use. The parcel is in the area of North Meadow Creek about twelve miles northwest of Ennis, Montana. Many houses already exist in the immediate area of the tracts and more are being constructed. Consequently, due to the small size of the BLM tracts

and the extensive development which is occurring, there is very little wildlife usage of those tracts except by local species of birds, possibly rabbits, small rodents, and an occasional deer.

3.1.6.8 Threatened and Endangered Species

None of the BLM lands have been identified as specifically providing crucial or critical habitat for any species which are currently listed as threatened or endangered. However, a review by the Montana Natural Heritage Program, indicates that some of the BLM lands are near or within the habitat range of certain species that are being considered for official designation under the Endangered Species Act (ESA). For example, the swift fox (*Vulpes velox*) is listed as a "candidate" species, but has not yet been listed.

Parcels which may be within possible habitat for the swift fox are H005, H016, B021, B032, B033, and B072. There is a known population (estimated at four breeding pairs) and at least 41 confirmed sightings of swift fox in a broad area mostly north of the Milk River between Chinook and Hinsdale and extending into Canada. The BLM exchange lands within northern Blaine County and northern Hill County are within this general area.

The interior population of the mountain plover (*Charadrius montanus*) is a proposed threatened species that migrates each spring to northern Montana. Mountain plovers arrive in early April and stay until about September. Their habitat consists of a large expanse of short-grass prairie in an area generally north, east, and west of the Fort Belknap Indian Reservation. Parcels which may be within possible habitat for the mountain plover are B033, T004, and T009. Sightings of the mountain plover are generally associated with prairie dog towns. Even though some of the BLM parcels are within the general habitat range of the mountain plover, it is not believed that those tracts provide critical habitat for the mountain plover.

Parcel HC074 is located near the Marias River and as a result is likely within a migration route and foraging area for bald eagles. However, due to the small size of this parcel (2.04 acres) the habitat on this parcel is not considered crucial for bald eagles.

Other parcels which may be within the habitat range of various sensitive species/species of concern are

F085, F200, F201, and HCO62(ferruginous hawk); H005, H016, and B072(Baird's sparrow); H005,H016, B021, B033, and B072(long-billed curlew); H016(loggerhead shrike); H016(sage grouse); M009, M012, M023, M024, and M103(lynx).

3.1.7 Recreation

Most of the BLM lands probably receive some amount of recreational use, particularly those adjacent to roads providing public access. However, none of the BLM lands stand out as being particularly significant from the recreation perspective. Some of the tracts have scattered stands of coniferous trees which allow for a greater variety of recreational pursuits. A comment was received from one person regarding a portion of Parcel F171 (SESE, section 15, T13N, R20E) which was being utilized for hunting grouse. This is a forty acre BLM tract which has a county road through it, thus providing access to the tract. However, this tract is a quarter mile square (40 acres) and likely provides limited opportunities without trespassing onto adjacent private land. Parcels M009 and M012 are adjacent to Forest Service land and likely provide more walk-in recreational opportunities, especially for big game hunting. However, most of the parcels do not have legal access to them and this, along with their scattered isolated location relative to other public land, significantly reduces the potential for public recreation on those tracts. Also, most of the BLM tracts are far enough from population centers to be removed from all but occasional recreational use, which probably would occur only during the hunting season.

3.1.8 Cultural Resources

Section 106 of the National Historic Preservation Act of 1966, as amended, requires that federally funded projects be evaluated for the effects on historic and cultural properties included in, or eligible for, listing in the National Register of Historic Places. Land exchanges have been defined by 36 CFR 800.9.b.5, as one of those activities which can have an "adverse effect" on archaeological and historical sites. Consequently, a Class III cultural resources inventory was completed on all of the BLM tracts and

consultation with the Montana State Historic Preservation Office has also been completed. Parcel M103 has a known cultural site on it which will be further tested and mitigated prior to it being conveyed. This testing and mitigation is being done in close coordination with the Montana State Historic Preservation Office. After that mitigation is completed, none of the BLM parcels will have significant cultural sites on them which would be adversely affected by the conveyance of the those parcels out of federal ownership.

3.1.9 Access

Most of the BLM tracts do not have legal public road access nor are they adjacent to other public lands (federal or state) which have public access. This is due to the fact that the BLM lands are primarily small in size and are scattered and isolated relative to other public lands. Forty-seven parcels, or about 90 percent, do not have legal public road access. Four parcels have walk-in access or primitive road access from adjacent public lands. Some BLM tracts may link corner-to-corner with other State or federal lands, but this corner-to-corner spatial relationship is not considered public access. Five parcels have a county road or a highway which provides access to them or to portions of them. One small parcel (HC074) only has legal access from the Marias River. Table 3-7 summarizes access to the BLM lands.

Table 3-7 Access to BLM Lands in the Phase 4A Crow Boundary Settlement Act Exchange

Parcel No.	County	Access	Highway/County Rd.	Walk-in
F005	Fergus	Yes	No	Yes
F021	Fergus	No		
F085	Fergus	No		
F102	Fergus	No		
F114	Fergus	No		
F171	Fergus	Yes	County road crosses those tracts in SESE of Section 15 and E2NW of Section 22	
F200	Fergus	No		
F201	Fergus	No		
F204	Fergus	No		
HC012	Choteau	No		
HC049	Choteau	No		
HC051	Choteau	No		
HC057	Choteau	No		
HC062	Choteau	No		
HC074	Choteau	Yes		Legal access is available from the Marias River
H001	Hill	No		
H005	Hill	No		
H016	Hill	No		
B021	Blaine	No		
B029	Blaine	Yes	Yes (county road)	
B030	Blaine	Yes	No	Yes

Table 3-7 Access to BLM Lands in the Phase 4A Crow Boundary Settlement Act Exchange

Parcel No.	County	Access	Highway/County Rd.	Walk-in
B032	Blaine	No		
B033	Blaine	No		
B035	Blaine	No		
B036	Blaine	No		
B037	Blaine	No		
B038	Blaine	No		
B039	Blaine	No		
B040	Blaine	No		
B041	Blaine	No		
B065	Blaine	No		
B072	Blaine	No		
T003	Toole	Yes	Yes (County Road)	
T004	Toole	No		
T009	Toole	No		
T015	Toole	No		
M002	Meagher	No		
M003	Meagher	No		
M004	Meagher	No		
M005	Meagher	Yes	Yes (State Highway 294 goes through the tract)	
M006	Meagher	No		
M007	Meagher	No		
M008	Meagher	No		
M009	Meagher	Yes		Yes (from adjacent Forest Service land)
M012	Meagher	Yes		Yes (from adjacent Forest Service land)
M017	Meagher	No		
M023	Meagher	No		
M024	Meagher	No		
M026	Meagher	No		
M027	Meagher	No		
M103	Meagher	No		
D1	Madison	Yes	Yes (Lot 17 has a county road through it)	

3.1.10 Socioeconomics

3.1.10.1 Timber and Grazing Revenue

Parcels F102, F114, F171, and M103 have merchantable timber on them. This timber has been

cruised to determine the volume and the species of the trees on those tracts. Other parcels included in the land exchange may have some timber on them but it is not considered to be merchantable.

The timber on Parcel F102 has been cruised as two separate units. One unit being the SWNE of section 12, T16N, R17E (forty acres) and the other unit is that timber in the NENE and SENE of section 12, T16N, R17E (eighty acres). Of the total 120 acres involved, there is merchantable timber on 105 acres. The volumes and species of trees from the timber cruise for these two units is as follows:

Timber Cruise Data for SWNE of section 12, T16N, R17E				
	Ponderosa Pine	Douglas Fir	Lodgepole Pine	Parcel Total
Gross Cubic Feet	154	19	192	365
Net Cubic Feet	126	16	142	284
Gross Board Feet	70,044	9,084	84,006	163,134
Net Board Feet	57,648	7,752	61,581	126,981

Timber Cruise Data for NENE and SENE of section 12, T16N, R17E				
	Ponderosa Pine	Douglas Fir	Lodgepole Pine	Parcel Total
Gross Cubic Feet	845	103	67	1,015
Net Cubic Feet	694	89	51	834
Gross Board Feet	385,242	49,962	29,304	464,508
Net Board Feet	317,064	42,636	22,242	381,942

The timber on Parcel F114 consists of about 25 acres of merchantable timber and the data from the cruise is as follows:

	Ponderosa Pine	Douglas Fir	Parcel Total
Gross Cubic Feet	34,414	1,543	35,958
Net Cubic Feet	26,471	1,389	27,860
Gross Board Feet	156,810	6,112	162,922
Net Board Feet	120,862	5,501	126,362

Parcel F171 consists of five small BLM tracts and only three of these tracts have merchantable timber on them. This merchantable timber is on the following tracts: the NENW of section 9, NWNW of section 15, and E2NW of section 22, T13N, R20E. The total acreage on these three tracts with merchantable timber is 61 acres. The data from the timber cruise for these tracts is as follows:

	Ponderosa Pine	Douglas Fir	Parcel Total
Gross Cubic Feet	772,000	356,000	1,128,000
Net Cubic Feet	684,000	315,000	999,000
Gross Board Feet	376,000	169,000	545,000
Net Board Feet	334,000	151,000	485,000

The timber on Parcel M103 consists of about 103 acres of merchantable timber. The data from the cruise for that timber is as follows:

	Ponderosa Pine	Douglas Fir	Parcel Total
Gross Cubic Feet	722	462	1,184
Net Cubic Feet	582	402	984
Gross Board Feet	349,314	210,984	560,298
Net Board Feet	266,356	179,226	445,582

The value of the merchantable timber on the above parcels will be included in the overall fair market appraised value for those parcels.

The remainder of the BLM parcels have either a grassland or sagebrush/grassland vegetative type suited to grazing. All of the BLM parcels are leased for livestock grazing except parcels F114, HC074, H005, T015, M012, and D1. Many parcels are rated quite low for grazing capacity which is indicative of

the sparse vegetative cover on many of these scattered and isolated tracts. Table 3-8 lists the estimated revenue generated from grazing authorizations by BLM. The revenue figures were generated by using the BLM grazing fee for 2002(\$1.43/AUM) and represents only one season of grazing.

Table 3-8 Grazing Revenue from BLM Phase 4A CBSA Lands

Parcel Number	County	Authorized AUM's	Acres	Grazing Revenue
JC-039	Chouteau	4	40.00	\$5.40
F005	Fergus	16	90.00	\$22.88
F021	Fergus	21	120.00	\$30.03
F085	Fergus	36	163.44	\$51.48
F102	Fergus	8	120.00	\$11.44
F114	Fergus	0	40.00	0
F171	Fergus	46	240.00	\$65.78
F200	Fergus	42	160.00	\$60.06
F201	Fergus	45	160.00	\$64.35
F204	Fergus	20	39.39	\$28.60
HC012	Choteau	11	40.00	\$15.73
HC049	Choteau	13	120.00	\$18.59
HC051	Choteau	4	37.67	\$5.72
HC057	Choteau	5	40.00	\$7.15
HC062	Choteau	4	40.00	\$5.72
HC074	Choteau	0	2.04	0
H001	Hill	32	114.04	\$45.76
H005	Hill	0	40.00	0
H016	Hill	8	40.00	\$11.44
B021	Blaine	11	40.00	\$15.73
B029	Blaine	11	40.00	\$15.73
B030	Blaine	11	40.00	\$15.73
B032	Blaine	8	120.00	\$11.44
B033	Blaine	38	188.30	\$54.34
B035	Blaine	13	77.06	\$18.59
B036	Blaine	10	40.00	\$14.30
B037	Blaine	24	80.00	\$34.32
B038	Blaine	24	80.00	\$34.32
B039	Blaine	5	40.00	\$7.15
B040	Blaine	6	40.00	\$8.58
B041	Blaine	7	40.00	\$10.01
B065	Blaine	11	80.00	\$15.73
B072	Blaine	10	40.00	\$14.30
T003	Toole	9	40.00	\$12.87
T004	Toole	4	40.00	\$5.72
T009	Toole	5	40.00	\$7.15

Table 3-8 Grazing Revenue from BLM Phase 4A CBSA Lands

Parcel Number	County	Authorized AUM's	Acres	Grazing Revenue
T015	Toole	0	40.00	0
M002	Meagher	42	120.00	\$60.06
M003	Meagher	67	200.01	\$95.81
M004	Meagher	49	320.00	\$70.07
M005	Meagher	24	80.00	\$34.32
M006	Meagher	18	80.00	\$25.74
M007	Meagher	22	80.00	\$31.46
M008	Meagher	30	120.00	\$42.90
M009	Meagher	27	155.75	\$38.61
M012	Meagher	0	170.58	0
M017	Meagher	50	320.00	\$71.50
M023	Meagher	11	40.00	\$15.73
M024	Meagher	45	160.00	\$64.35
M026	Meagher	16	49.78	\$22.88
M027	Meagher	19	81.42	\$27.17
M103	Meagher	32	160.00	\$45.76
D-1	Madison	0	71.72	0
Totals		970	4921.20	\$1387.10

Grazing receipts overall to the BLM would decrease \$1,387.10 if all of the BLM tracts were exchanged into private ownership. All of the affected Counties in which the BLM lands are located would stand to lose somewhat in the area of grazing fees since all, except six, of the BLM parcels generate revenue from livestock grazing. This is because a portion of all of the grazing fees from BLM lands are returned to the State of Montana who then shares them with the

Counties in which those fees originated. The amount of grazing fees returned to the State is 12 1/2% of fees collected within a grazing district and 50% of fees collected on land outside a grazing district. The BLM lands within a grazing district are those lands which are managed per section 3 of the Taylor Grazing Act. BLM lands outside of a grazing district are those lands which are managed per Section 15 of the Taylor Grazing Act.

3.1.10.2 Payment in Lieu of Taxes

Payment in Lieu of Taxes (PILT) is a program which compensates local governments for federal lands that cannot be assessed a property tax by the Counties in which those lands are located. PILT is computed using two different formulas based upon the amount of qualifying federal lands, population and other factors in those counties where the public lands are located. The counties are entitled to the higher of the two amounts generated by the formulas. However, Congress must fund the PILT program each year, and it is not automatically funded at the same rate each

year or at a level which would allow full payments to the counties. The PILT payments discussed in this section are based on payments in the year 2001.

The BLM lands being considered for use in this exchange are located in Blaine, Chouteau, Fergus, Hill, Madison, Meagher, and Toole Counties. Table 3-9 below shows the 2001 PILT payments to each of those counties, and the average per-acre PILT payment made. These PILT calculations include the portion of BLM grazing fee receipts that are returned to the counties (they are included under the table column titled "prior year payments").

Table 3-9 2001 PILT Payments to Counties on Phase 4A BLM Lands

County	Entitlement Acres	Prior Year Payments	Population	Payment Ceiling	Ceiling in Effect?	Alternative A (1)	Alternative B (2)	Estimated Payment (3)	Proration (4)	Actual Payment (5)	Average Payment Per Acre (6)
Blaine	453,464	\$ 2,511	7,000	\$792,470	Yes	\$789,959	\$117,901	\$789,959	0.588196	\$464,651	\$1.02
Chouteau	157,932	\$10,668	5,000	\$721,320	No	\$292,561	\$41,062	\$292,561		\$172,083	\$1.09
Fergus	488,772	\$22,086	12,000	\$1,022,400	No	\$916,356	\$127,081	\$916,356		\$538,997	\$1.10
Hill	47,790	\$585	17,000	\$1,269,900	No	\$91,172	\$12,425	\$91,172		\$53,627	\$1.12
Madison	1,051,745	\$52,919	7,000	\$792,470	Yes	\$739,551	\$273,454	\$739,551		\$435,001	\$0.42
Meagher	483,883	\$76,957	1,932	\$248,049	Yes	\$171,092	\$125,810	\$171,092		\$100,636	\$0.21
Toole	45,579	\$1,577	5,000	\$641,950	No	\$85,935	\$11,851	\$85,935		\$50,546	\$1.11

Notes: (1) Alternative 'A' formula = (Entitlement acres X per-acre payment of \$1.92 for 2001) - Prior Year Payments. This formula is subject to a payment ceiling, which is calculated for each county based on the county's population. If 'entitlement acres X the per-acre payment' is greater than the payment ceiling, then 'prior year payments' are deducted from the payment ceiling. (2) Alternative 'B' formula = Entitlement acres X per-acre payment of \$0.26 for 2001. The calculated amount cannot exceed the payment ceiling. (3) The payment the county is entitled to is the higher of the two amounts calculated by the formulas. (4) If Congressionally appropriated funds are insufficient to fully fund counties' payments, then all counties' payments are prorated based on actual appropriations. (5) Actual payment = Estimated Payment X Proration. (6) Average payment per acre = Actual payment / Entitlement Acres. Source: U.S. Dept of the Interior, Bureau of Land Management. 2001. *Payment in Lieu of Taxes Fiscal Year 2001*

3.1.10.3 Land Values

All of the BLM lands will be appraised to determine their fair market value. The value of any lessee improvements will be considered when determining the overall land value prior to disposal of the parcel. There are four BLM tracts (F102, F114, F171 and M103) which have merchantable timber on them and the value of that timber will be included in the final appraised value for those parcels. Most of the tracts are currently utilized as grazing land and will reflect the value of similar rangeland in those areas unless there is public road access to the BLM tracts which may then increase the appraised value depending upon the amount of residential development in that

specific area and the comparable sales of similar land in that area with public road access.

After completion of the appraisal and Environmental Assessment processes, the Notice of Decision, which is BLM's final decision regarding the exchange, can be issued. The total value of the BLM tracts to be disposed and the land to be acquired must be included in the Notice of Decision. The Notice of Decision will be sent to all interested parties such as grazing lessees, right-of-way holders, etc. as well as published in local newspapers of general circulation in the area where the lands are located in order to provide for public review and comment. A competitive process will not be utilized in regards to

the conveyance of any of the BLM tracts. The grazing lessee and/or the adjacent landowner will be offered the opportunity to acquire the parcels at the appraised fair market value. If any of the tracts are to be offered under a competitive process, they must be utilized under the auspices of the "Baca Bill" whereby funds from BLM tracts so offered are deposited into an account for possible use by any Interior agency in acquiring land within wilderness areas, along Wild and Scenic Rivers, or other such high priority programs. In other words, any BLM tract which is to be offered competitively will not be available for use in this Phase 4A land exchange.

3.1.10.4 Land Use Authorizations

Other than authorization for livestock grazing, the only other surface use authorizations on the BLM tracts are for rights-of-way. There are 13 right-of-way authorizations which affect 9 of the BLM parcels being considered for disposal. These right-of-way grants are for different types of uses including roads, transmission lines, underground telephone cables, oil and gas pipelines, and highways. The following table delineates which BLM parcels are affected by these authorizations, the type of use for the right-of-way, and the name of the right-of-way holder. Some of these authorizations, such as for highways and railroads, are perpetual grants while others have a term for a specific number of years which means their authorization would expire sometime after the land has been conveyed out of federal ownership.

Table 3-10 Rights-of-Way Issued on Phase 4A BLM Tracts

Parcel No. & Legal Description	County	Serial #	Use	Issued To
F204 T13N, R20E, Sec. 2: Lot 2	Fergus	MTM58077	Electric Transmission Line	Fergus Electric Cooperative, Inc.
H001 T37N, R11E, Sec. 2: Lots 5, 6, 7, and 8, SWNE	Hill	MTM85484	Pipeline	Express PPLN Partner
B029 T29N, R21E, Sec. 24: SESW	Blaine	MTM40972	Telephone Cable	Triangle Tel. Coop.
B037 T28N, R21E, Sec. 17: NWSW Sec. 18: NESE	Blaine	MTM59070 MTM40972	Electric Trans. Line Telephone Cable	Hill Co. Electric Coop. Triangle Tel. Coop.
T009 T33N, R3W, Sec. 25: SESW	Toole	MTM041123	Railroad	Burlington Northern Sante Fe
T015 T35N, R1W, Sec. 30: NENW	Toole	MTM57790 MTM031611	Electric Trans. Line Road	Marias River Electric Coop. MT DOT
M005 T7N, R8E, Sec. 22: WNW	Meagher	MTM041290 MTM033510	Railroad Material Site	Chic, Mil, St. Paul & Pacific Railroad MT DOT
M103 T12N, R4E, Sec. 2: SENE, WSW, NESE	Meagher	MTM61172	Pipeline	Elk Canyon Ranch
D1 T4S, R2W, Sec. 10: Lots 2, 3, 4, 17, SSW SE	Madison	MTM87608 MTM88176 MTM88177	Electric Trans. Line Road Telephone Cable	MT Power Company Kevin Spencer Three Rivers Tel Coop

Ten of the parcels (HC012, H005, H016, B029, B030, B040, B041, T003, T015, and M027) currently have oil and gas leases on them which could result in some surface disturbance after conveyance even though the mineral estate will remain in federal ownership.

3.1.11 Hydrologic and Soil Resources

Four BLM parcels have perennial streams which flow through them or which are adjacent to them. Parcel HC074 has about 800 to 900 feet of the Marias River adjacent on the west side of the tract. Parcel M003 has about a quarter mile of Battle Creek which flows through it. Parcel M008 has a short stretch (about 200 yards) of Little Elk Creek which crosses the southeast corner of the NWNW of section 14. Parcel M024 has about a quarter mile of Eagle Creek which

flows through the W2SW of section 34. Table 3-11 lists these BLM parcels and the approximate mileage of those streams which cross them. The table also indicates if the stream or river is considered navigable and if it is accessible from a public access point adjacent to the parcel. In addition, there are many miles of intermittent or ephemeral drainages on the BLM lands, which may have water flow in them at certain times of the year. Also there are stock water dams on some parcels (see Water Rights). Most of the stock reservoirs are not large enough or reliable enough to support fisheries, but they do provide habitat for aquatic life adapted to prairie ponds and waterfowl.

Table 3-11 BLM Lands Crossed by Perennial Streams in the Phase 4A Exchange

BLM Parcel	Stream	Miles on Parcel	Navigable Stream	Public Access
HC074	Marias River	.15	No	Yes
M003	Battle Creek	.25	No	No
M008	Little Elk Creek	.10	No	No
M024	Eagle Creek	.25	No	No

While there may be a thin veneer of alluvial (water deposited) soils along some streams and ephemeral drainages, soils generally have developed *in situ* over the underlying geologic materials. These parent materials, along with climate, vegetation, relief, and

time are some of the primary factors that have led to soil formation.¹² Table 3-12 shows the general soils types expected at each tract, based on a soils map of Montana developed by the USDA Soil Conservation Service, Montana Agricultural Experiment Station, and Montana State University.

Table 3-12 General Soils for BLM Exchange Tracts

Tracts/Parcels	General Soils Description	Uses
HC074, T003, T004	Mollisols ¹³ and Entisols ¹⁴ mostly in areas of strongly sloping to steep soils on dissected sedimentary bedrock.	Rangeland

¹² Brady, N. C., 1974. *The Nature and Property of Soils*. McMillan Publishing, New York, NY.

¹³ Mollisols are soils with deep, dark, relatively fertile topsoil (mollic epipedon) formed under grassland vegetation of the steppes and prairies.

¹⁴ Entisols are recently formed soils resulting from a variety of influences that interrupt or impede the pedogenic process, such as erosion on poorly vegetated sites.

Table 3-12 General Soils for BLM Exchange Tracts

Tracts/Parcels	General Soils Description	Uses
H005, H016	Central till plains have Aridisols ¹⁵ on rolling plains and Entisols and Aridisols on hilly sections. Mollisols are found in nearly level sections.	Dry Land Farming and Rangeland
F005, F021, F085, F200, F201, HC049, HC051, B040, B041, B065	On clayey-shale plains, soils are mostly Entisols and Aridisols, with Entisols dominating badlands and river "breaks"	Rangeland
F102, F114, F171, F204, HC012, M002, M003, M004, M005, M006, M007, M008, M009, M012, M017, M023/M024, M026, M027, M103, D1	Soils of the foothills are mostly Mollisols, with some Inceptisols ¹⁶ . Lower foothills, benches, and terraces include Mollisols, Aridisols, and Entisols. Steep areas have mainly Aridisols and Entisols.	Rangeland and Dry Land Farming
HC057, HC062, H001, B021, B029, B030, B032, B033, B035, B036, B037, B038, B039, B072, T009, T015	Mollisols are found on the rolling plains, and terraces or benchlands formed by outwash/deposition. Some Aridisols are found on the clayey terraces, fans, benches, and basins which were formed via stratified deposition.	Rangeland and Dry Land Farming

3.2 Private Lands

3.2.1 General Geography, Topography and Aesthetics

The private lands involved in this exchange are generally located in the far western portion of the Crow Reservation in south central Montana about ten

miles east of Pryor, Montana. The private lands are grouped into those which are in the Woody Creek drainage and those in the East Fork Pryor Creek drainage.

The Crow Reservation is part of the Rocky Mountain Foreland¹⁷, a transitional zone between the true plains and the Rocky Mountains. The Reservation offers a wide variety of geographic and topographic settings, ranging from alpine (over 9,000 ft.) in the Bighorn

¹⁵Aridisols are soils of arid regions that are dry more than 50 percent of most years and not moist as much as 90 consecutive days when the soils are warm enough for plant growth.

¹⁶Inceptisols are soils that show a moderate amount of development; they have more development than an Entisol, but not enough to qualify as a Mollisol or other more developed soil orders.

¹⁷Rocky Mountain Foreland is an environmental region more fully described in the First Annual Report, Montana Environmental Quality Council, 1972.

Mountains to riparian floodplains (2,800-3,000 ft.) along the Bighorn and Little Bighorn rivers. Generally, the private lands that are proposed for acquisition are between these two extremes in foothills and along intermittent and perennial

drainages. The private lands consist of cultivated farmland, grassland, and a mix of grassland/sagebrush. Table 3-13 provides some general information regarding the geographic setting, topography and aesthetics of the lands in the exchange.

Table 3-13 General Geography, Topography and Aesthetics of Private Land in the Phase 4A Crow Boundary Settlement Act Land Exchange

Tracts Identity	County	Landscape Position ¹⁸	Topography ¹⁹	View ²⁰	Scenery ²¹
Woody Creek Lands	Big Horn	Upland	Varies from flat to rolling plateau to dissected where terrain descends to bottoms	Expansive	Cropland and Prairie
East Fork Pryor Ck Lands	Big Horn	Upland	Flat to rolling cropland and rolling to broken rangeland	Expansive	Cropland and Prairie

3.2.2 Climate

The Crow Reservation has a continental climate with cold winters and warm to hot summers. In Hardin, the July average daily maximum temperature is 90° F with an average minimum of 55° F. In January the average maximum and minimum temperatures are 32° F and 6° F, respectively. Precipitation varies with elevation from around 10 inches per year along the Big Horn River between St. Xavier and Hardin, to over 30 inches in the Pryor and Bighorn mountains. The private land is located in a zone of 15-20 inches of annual precipitation, with just over half that coming in the growing season months of April through July.

3.2.3 Groundwater, Geology and Mineral Potential

The Crow Reservation includes parts of the folded Middle Rocky Mountains, represented by the Bighorn and Pryor mountains, while the remainder of the Reservation lies within the western portion of the Powder River Basin. The high topography in the southwestern part of the reservation is due to the uplift and folding of the Bighorn and Pryor mountains, which include primarily Paleozoic rocks, including the fairly distinctive limestones of the Madison Group which form the sides of Bighorn Canyon. Some Upper Paleozoic (Tensleep Formation), Mesozoic (Chugwater, Reardon, Swift, and Morrison Formations) and lower Cretaceous (Kootenai Formation) units also outcrop along the flank of the Bighorn Mountain uplift.

¹⁸Landscape position is described in broad terms relative to major drainages and intervening divides. This characteristic is divided into Lowland (floodplain or terraces near the primary drainage), Intermediate (lands between Lowland and Upland), and Upland (on or straddling the divide).

¹⁹Topography is divided into categories of increasing drainage density and roughness of terrain using descriptive terms like Flat, Rolling, Broken, Dissected, and Badland.

²⁰If views are typically 10-20 miles, they are termed Expansive; 5-10 miles, Wide; 1-5 miles, Open; less than a mile, Narrow; and less than 200 yards, Closed.

²¹Scenery depicts the typical vegetation you might see at this site. Sage denotes sagebrush and grass mixed. Prairie denotes mostly grassland, Mixed means mixed scattered trees, grass and/or sagebrush, and Timber denotes most views are of timber stands.

The Wolf and Rosebud Mountains along the eastern side of the reservation result from the eroded, upturned margins of Paleocene strata that extend eastward into the Powder River Basin. The Fort Union formation, known for its coal beds is the primary formation (with the Tullock, Lebo, and Tongue River Members of that formation) present on the eastern side of the Reservation.

Between these higher zones on the west and east are lower areas, dominated by late Cretaceous formations. These units are dominated by thick, dark grey shales with some sandstone units, localized bentonite beds, and some lignite and coal seams. Generally these shales are differentiated into the Colorado Group (Thermopolis, Mowry, Belle Fourche, Greenhorn, Carlile, and Niobrara Formations) and the Montana Group (Gammon, Claggett, Judith River, Bearpaw and Fox Hills Formations). Of these, only the Judith River Formation and Fox Hills Formation are sandstones and considered to be significant aquifers. Along the northwestern edge of the Reservation, the Cretaceous Eagle Sandstone outcrops as a white, fine-to-medium grained sandstone with individual cliff-forming beds up to 50 feet thick. Terraces and floodplain deposits occur along the Bighorn and Little Bighorn rivers and along some perennial streams like Pryor Creek and Lodgegrass Creek. Some higher level terrace deposits in the northeastern portion of the reservation are interpreted to be remnant deposits from the ancestral Shoshone River. Specific geology of the private land to be acquired is described generally in Table 3-14.

Groundwater potential is closely tied to the geology of the Crow Reservation. The only areas where relatively high volumes of good quality water are available are in the alluvium along the major rivers and streams. Because alluvium is limited in extent and relatively shallow, few areas are particularly conducive to the production of either large quantities or good quality groundwater. Small amounts of water good enough for stock watering have been obtained from some of the sandstone units in the Cretaceous shales generally not considered to be aquifers.

Similar results of limited quantities of water can be expected from the sandstone units of the Fort Union Formation. The mineral potential on the Reservation is related to the underlying geology. Coal exists under the eastern edge of the reservation, particularly in the Tongue River Member of the Fort Union Formation. Oil and gas could exist virtually anywhere on the Reservation and several active oil fields produce in the Ash Creek, Soap Creek, Lodgegrass, and Grey Blanket Creek areas. Sand and gravel is available in the alluvium along the streams and rivers. Some geologic units have medium to high potential for bentonite, gypsum, clinker (fire baked shale from burnt coal beds, also locally known as scoria) and limestone.

The private lands are located along the bench land off the northeastern slopes of the Pryor Mountains. The basic geologic formations which underlie the private lands includes the following formations as shown on the Geologic Map of Montana provided by the Montana Bureau of Mines and Geology:

The Mowry Shale formation affects most of those private properties which are in the area of Woody Creek in T4S, R28E which is the eastern portion of the private properties. This formation is chiefly a light-gray silicified shale and claystone with minor amounts of sandy shale and sandstone. It sometimes also contains thick beds of bentonite.

The Thermopolis Shale formation is the primary geologic structure which affects the remainder of the private land to be acquired. This formation is a dark gray shale with some sandstone. The subsurface consists of a muddy sandstone member or Newcastle Sandstone member at the top, a shale member in the middle, and Fall river Sandstone or First Cat Creek sand of drillers at the base.

The mineral estate for the private lands, which is mostly already in federal ownership, will not be a part of this land exchange.

Table 3-14 Geology and Mineral Potential of Private Lands in the Phase 4A Crow Boundary Settlement Act Exchange

Tract Identity	County	Geologic Formation ²²	Minerals ²³
East Fork Pryor Creek Lands	Yellowstone and Big Horn	Thermopolis Shale/Mowry Shale	Oil, Gas
Woody Creek Lands	Yellowstone and Big Horn	Thermopolis Shale/Mowry Shale	Oil, Gas

3.2.4 Surface Water Rights

Table 3-15 identifies water rights on the private land within the Crow Reservation that are to be acquired in this exchange. There are five water rights recorded on the private land to be acquired. However there are numerous fee tribal allotments within the ranch unit that also depend on those water rights for grazing purposes as they have been utilized in the past as a part of the overall ranch unit. It is assumed that these tribal allotments will continue to be a part of the overall ranch unit.

Because the traditional pattern of grazing involves pasture units much larger than some of the tracts of private land to be acquired, circumstances may arise where there is no water on those private tracts and as a result, it may be critical that the use of the adjacent fee tribal allotments be continued. The same is true when a fee tribal allotment does not have water, but depends on a water source on a nearby tract of acquired private land to make it fully useable for grazing. Although these impacts are discussed in the impact evaluation section of the environmental assessment, not enough information is available to individually characterize the impact to each of the tracts involved.

Table 3-15 Water Rights on Private Land in the Phase 4A CBSA Exchange

Legal Description	Acres	Water Rights	Type of Use
BIG HORN COUNTY			
T4S, R28E			
Section 27: NW, NWNE, WSWNE, WSW, NNESE, SWNESE, WSESE	350.00	43P-044547 43P-044548	Stockwater Stockwater
Section 28: All	640.00	43P-W-044546	Stockwater
Section 29: All	640.00	43E-W-044545	Stockwater
Section 30: Lots 5, 6, 11, 12, 13, 14, ESW, SE	474.58	43E-W-044544	Stockwater
Section 32: Lots 3, 4, EW, WE	402.30	None Listed	
T5S, R28E			
Section 4: Lots 2, 3, 4, SNW, WSWNE, NSW, SWSW, WSESE	362.97	None Listed	
Total Big Horn County	2869.85		

²²Geologic information is taken from Geologic Map of Montana as provided by the Montana Bureau of Mines and Geology.

²³Mineral potential has not been assessed, since the minerals will not be exchanged

3.2.5 Vegetation

The Montana Vegetation Types map²⁴ lists five vegetative types on the Crow Indian Reservation. Lodgepole pine-Douglas fir forest occurs in the Bighorn Mountains and in the foothills north of the Pryor Mountains. Eastern Montana ponderosa pine forest occurs in the Wolf Mountains and on a small portion of the Crow Reservation immediately southeast of Billings. Ponderosa Pine Savannah

occurs near the eastern edge of the Reservation. The Central Grassland vegetative type occurs in the vicinity of Hardin and extends about 20 miles east and west and about 15 miles up the Bighorn and Little Bighorn drainages. The remainder of the Reservation consists of the Foothill Grassland vegetative type. All of the private land to be acquired is within the Foothill Grassland vegetative type. Table 3-16 shows the general species composition for this vegetative type.

Table 3-16 Vegetative Type Characteristics for Private Lands
(distinguishing species in bold)

Foothills Grassland				
Tracts/Parcels	Grasses	Forbs	Shrubs	Trees
All of the private land	Bluebunch wheatgrass Western wheatgrass Idaho fescue Sheep fescue Needle-and-thread Mountain brome Pumpelly brome Thickspike wheatgrass Bluegrass Sandberg bluegrass Prairie junegrass Green needlegrass Blue grama	Western yarrow Clubmoss Lupine Phlox	Douglas hawthorne Saskatoon serviceberry Western chokecherry Russet buffaloberry Rose	Quaking Aspen

3.2.5.1 Rare Plants

Rare plants have not been identified on any of the private lands that are proposed for exchange. Information received from the Montana Natural Heritage Program indicates that there are no rare plants on any of the private lands involved in this exchange proposal.

3.2.5.2 Noxious Weeds

Noxious weeds are usually exotic plants that proliferate and reduce the value of land for agriculture, forestry, livestock, wildlife, and other beneficial uses. Noxious weeds spread rapidly, out compete most native species and have at least some of the following characteristics:

²⁴Payne, G.F., 1973 Vegetative Rangeland Types in Montana, Montana Agricultural Experiment Station, Montana State University, Bozeman.

1. Continuous seed production during the growing season
2. Highly efficient seed dispersal
3. Persistent banks of seeds or seedlings
4. Capability for growth in adverse climates and soils
5. Capability to reproduce through seeds, sprouts, and rhizomes
6. Few natural controls ^{25 26}

Several noxious weeds are known to be established on the Crow Reservation. Spotted knapweed occurs as isolated infestations along Interstate 90 near Hardin and the Wyoming border; near Fort Smith; along the Edgar-Pryor road; and along Highway 212 near the eastern boundary of the Reservation. Leafy spurge occurs west and southwest of Pryor, near the western edge of the Reservation, and in the Lodgegrass and Wyola areas. Specifically, on the private land to be acquired, there is Canada thistle, hounds tongue, and field bindweed. There are significant amounts of Canada thistle in the bottoms of various drainages which cross the private lands.

3.2.6 Wildlife Habitat and Fisheries

With its varied topography, the Crow Reservation provides a wide variety of habitat for a number of species. There are 64 small mammal species known to exist on the reservation. Ten large mammals, including mountain lion, black bear, elk, white-tailed deer, mule deer, and moose also live on the Reservation. Seasonally, there are as many as 261 different bird species. Five amphibians and 15 reptiles are known to occur on the Reservation.²⁷

The private lands on the Reservation provide excellent habitat suitable for antelope, mule deer, and upland game birds. Some of the stock water ponds in the area provide seasonal waterfowl habitat. Generally, these habitats are little used by game species because of year-round hunting by Crow tribal members, combined with no bag limits, and relatively easy 4-wheel drive access.

The private lands are crossed by one perennial stream and numerous ephemeral drainages, the most notable ephemeral drainage being Big Woody Creek. The perennial stream is East Fork Pryor Creek. Table 3-17 provides further information regarding East Fork of Pryor Creek.

Table 3-17 Perennial Streams on the Private Land in the Phase 4A Exchange

Private Land	Stream	Miles on Parcel	Fishery Present	Public Access
East Fork Pryor Creek Lands	East Fork Pryor Creek	5.0	No	No

²⁵Montana Department of Agriculture, 1981, Weed Training Manual, Helena, MT

²⁶McDonald, P and C. Tappeiner, 1986. "Weeds," Journal of Forestry, 84(10) 34-37.

²⁷Crow Tribe Resource Development Technical Reports. Oct. 1977, "Wildlife", prepared by Rocky Mountain Research Corporation, p 5-1 to 5-34.

3.2.6.1 Threatened and Endangered Species

The Crow Reservation provides historic habitat for grizzly bear, wolf, and black-footed ferret, although none of these species presently exist there. Occasional bald eagle and peregrine falcon use occurs on the Reservation, but none of the private lands involved in the exchange have been linked to this occasional use.

Information received from the Montana Natural Heritage Program indicates that there are no known occurrences of threatened or endangered species on any of the private lands involved in this exchange proposal. None of the private lands involved have any habitat critical to any threatened or endangered species.

3.2.7 Recreation

Due to the lack of legal road access to most of the private land tracts, there is little, if any, potential recreational use on the lands to be acquired. After the land is acquired, there could be some use of the lands by tribal members for hunting or other purposes. Tribal lands are essentially not open to big game hunting by non-Tribal members, however, it appears the hunting of upland game birds by non-Tribal members is allowed. The private land to be acquired does not have legal public road access, however, it is adjacent to other land acquired in Phase 4 which does have legal public road access.

3.2.8 Cultural Resources

A class I survey (literature review) of all of the private land involved in Phases 4 and 4A indicated that there are three recorded cultural resource sites involving rock alignments, lithic scatters, and tipi rings in the areas of Wild Horse Ridge, East Pryor Creek, and Deep Creek. After the acquisitions have been completed and the land placed in a federal trust status, any action which would involve surface disturbance in the area of those sites would require a

Class III cultural resource inventory and evaluation in order to determine if those cultural sites would be adversely impacted.

3.2.9 Access

As mentioned previously there is not legal public road access to the land to be acquired in Phase 4A. However, those lands are located adjacent to land acquired in Phase 4 which does have legal road access. The private land is surrounded by a combination of federal trust lands acquired in Phase 4, fee (private) lands, Tribal lease lands or individual Tribal allotments. Tribal members may have access to the private lands to be acquired by crossing Tribal lease lands or allotted lands and fee owners can reach these lands from their adjacent ownership, but the lands are not legally accessible to the general public.

Primitive roads and four-wheel drive trails provide access to the private land. However, these roads are considered private and provide access exclusively to the lessee or are used cooperatively by adjacent landowners and lessees to reach their respective lands. In some cases, a written easement or right-of-way may have been granted while in other cases access may be by common consent between adjacent landowners.

3.2.10 Socioeconomics

3.2.10.1 Timber and Grazing Revenue

There are no commercial timberlands on the private lands involved with this exchange. Grazing and cultivated cropland are the only known sources of income which have been derived from the private lands to be acquired. It is assumed that those uses will continue as in the past. However, the Tribe could, after the acquisition has been completed, opt to convert the unit to strictly grazing and forego the dryland cropping. Specific numbers as to the yields on the cropland are not available, but Tribal grazing leases average about \$5.00 per acre.²⁸

²⁸Information provided by the BIA and Crow Tribe indicates that, depending on competition for leases, tribal lease rates may vary from \$1.00 to as high as \$10.00 per acre (or about \$4.00 to \$40.00/AUM). However, \$5.00 per acre was considered more indicative of the actual market for both tribal and private leases.

3.2.10.2 Property Taxes

The lands BLM would acquire to place in trust for the Crow Indian Tribe are all in Big Horn County and are fee lands owned by the Tribe on which property taxes are currently being paid. The current tax levies on those parcels are listed in Table 3-18 below. These lands do not qualify for PILT payments because they are private lands.

3.2.10.3 Land Values

All of the lands involved in the exchange must be appraised to determine their fair market value. The appraised value of the private land to be acquired is \$380,592. There are 213 acres of dry cropland and 2656.85 acres of native pasture land for a total of 2,869.85 acres.

The acquisition of the 2,869.85 acres will provide a value of \$380,592 towards the \$381,230.30 balance still due the Crow Tribe in Phase 4A as far as the land transaction is concerned. However, there is a ledger account balance from Phase 4 of \$376.60 still due the Crow Tribe. Consequently, there will be a total balance of \$1,014.90 still due the Crow Tribe which will be accommodated as an equalization payment to the Crow Tribe at the closing of Phase 4A. This remaining balance of \$1,014.90 is not to be utilized to acquire additional land because, given the per acre appraised values, it would not allow for the acquisition of a tract of land on an aliquot part basis and consequently, a special survey to delineate a small irregular tract would be needed to match the appraised per acre land value with the \$1,014.90 balance remaining. Such a survey would be expensive and unnecessary since the exchange procedures allow for an equalization payment.

Table 3-18 Current Property Taxes on Private Lands to be Acquired in Phase 4A

Legal Description	Acres	Tax	Average Tax per Acre
T4S R28E Section 27: NW, NWNE, WSWNE, W SW, NNESE, SWNESE, WSESW	350.00	\$186.66	\$0.53
T4S R28E Section 28: All	640.00	\$748.84	\$1.17
T4S R28E Section 29: All	640.00	\$255.74	\$0.40
T4S R28E Section 30: Lots 5, 6, 11, 12, 13, 14, E SW, SE	474.58	\$229.91	\$0.48
T4S R28E Section 32: Lots 3, 4, E W, WE	402.30	\$131.29	\$0.33
T5S R28E Section 4: Lots 2, 3, 4, SNW, WSWNE, NSW, SWSW, SSES	362.97	\$151.83	\$0.42
Total	2,869.85	\$1,704.27	\$0.59

Source: MT Dept of Revenue, Big Horn County (personal communication, May 2002)

3.2.11 Hydrologic and Soil Resources

All of the drainages on the private lands, except one, are intermittent drainages and are usually dry most of the year. Table 3-17, presented earlier, summarizes the perennial drainage on the private land. Small stock water reservoirs, springs and ponds on the private tracts may also provide some aquatic habitat for waterfowl, frogs, turtles, and aquatic insects. Most of these reservoirs evaporate in dry years, so no

fisheries are supported. Table 3-15, also presented earlier, indicates which parcels have stock water available.

Intense local thunderstorms during summer and "chinook" winds that rapidly melt snow cover in winter can lead to runoff in the intermittent drainages. Major runoff can be accompanied by severe erosion and gullying, particularly on those lands underlain by erodible shales. Some lands may have "badlands" developing where poor soils, little vegetation, and occasional, high intensity runoff occurs.

In general, most of the soils on the private lands have developed in place or "in situ" on the underlying geologic formations, except for relatively small areas where alluvial and terrace soils are deposited along drainages. Table 3-19 shows the generalized soil groups for the private lands.

The high percentage of silt and clay content in underlying shales produces soils that are clayey to loamy and which have good water holding capacity. High clay content inhibits rapid infiltration of water, so short duration precipitation events tend to only wet the surface layer and not penetrate to any depth.

This makes driving access on unimproved roads nearly impossible when soils are wet and is responsible for the tendency to have runoff, resulting in gullying. Soils developed over more sandy units tend to have loamy characteristics, take on water faster and dry out quicker and are not as prone to gully and badlands formation. The majority of the soils and terrain on the private lands are more conducive to livestock grazing than farming, however, out of the 2,869.85 acres being acquired, about 213 acres are currently cultivated to raise dryland grain and hay crops.

Table 3-19 General Soils for Private Lands to be Acquired

Parcels/Tracts	General Soils Description	Uses
East Fk of Pryor Crk	Entisols and Aridisols which are predominately clayey with strongly sloping to steep slopes on dissected shale plains	Rangeland
Woody Creek Tracts	Mollisols-Entisols consisting of nearly level to strongly sloping soils on sedimentary bedrock plains.	Rangeland and Dry Land Farming

4.0 CONSEQUENCES OF THE PROPOSED ACTION AND ALTERNATIVES

The impact analysis of the Proposed Action (also called the Exchange Alternative—see definition of Proposed action and alternatives in Section 2.0) starts from the premise that the proposed exchange will occur and that the impacts of the exchange will stem solely from differing management practices or proposed changes in the basic land use that would occur if the exchange were completed. It also assumes that the proposed exchange process (exchange of deeds, filing of deeds, transfer of water rights, etc.) will go forward after the Notice of Decision has been issued and any adverse comments resolved or the BLM appeals process completed.

Analysis of the No Action alternative will look at the consequences of not exchanging lands as proposed. If this alternative were implemented, BLM would still be under the mandate to acquire private land within the Crow Reservation, but with other BLM lands that would have to be identified and analyzed in a separate land exchange proposal for which a separate EA would have to be prepared.

Under the Proposed Action, it is the BLM's intent to acquire a portion (\$381,230.30) of the Pryor Creek Ranch in order to fulfill the final requirements of the Crow Boundary Settlement Act. Specifically which BLM lands will ultimately be disposed and which private lands will be acquired will be identified in the Notice of Decision which will be issued subsequent to this Environmental Assessment. If there are not sufficient BLM lands disposed in order to acquire the specified amount of private lands, then more BLM lands will have to be identified and addressed in the Environmental Assessment process to fully satisfy the requirements of the Crow Boundary Settlement Act.

4.1 Impacts of the Proposed Action

4.1.1 General Geography, Topography and Aesthetics

The proposed action will have no affect on the general setting of any of the BLM lands, with the possible exception that a future timber sale and harvest on Parcels F102, F114, F171, and M103 could change the viewshed, by a short-term reduction in timber volume and by changes in the age class distribution of timber. However, timber harvest on parcel M103 is not likely because the surrounding landowner who would acquire that parcel would manage the land for other purposes. Also some parcels which are currently rangeland with possible suitable tillable soils and topography, especially Parcels B021, H001, H005, and HC074 may be converted to cropland, but this is generally not expected to occur in the near future on any of the those parcels, except HC074, due to depressed grain markets.

There are no impacts anticipated which will affect the geography, topography or aesthetics of the private lands to be acquired on the Crow Reservation as a result of this exchange. However, it is possible that the Crow Tribe may allow the land currently being cultivated to be converted back to grass for grazing purposes.

4.1.2 Climate

No climate related impacts will result from the proposed exchange.

4.1.3 Groundwater, Geology and Mineral Potential

On the BLM lands, no impacts are anticipated to groundwater, geology, or to present or future mineral potential as a result of the proposed exchange.

Because BLM will retain ownership of the mineral estate, it is possible that unanticipated future mineral development might preclude surface uses by the new owner. Should oil and gas development be proposed upon these lands, the private landowner would be given notice pursuant to the Surface Owner Damage and Disruption Compensation Act, "82-10-501, et. seq., MCA. However, for those ten parcels which currently have an oil and gas lease on them (HC012, H005, H016, B029, B030, B040, B041, T003, T015, and M027) there would not be any compensation for surface disturbance if oil and gas development specific to that lease were to occur before the current oil and gas lease expires. Should hard-rock mineral development be proposed upon these lands by any means other than hand tools, the private landowner will be given notice pursuant to the Landowner Notification Act, "82-2-301, et. seq., MCA.

No further impacts are anticipated in regards to the acquisition of the private lands on the Reservation, as it is expected the management and use of those lands will continue as in the past. If mineral development on the federal mineral estate on those lands should occur in the future, there could be impacts to the surface uses and to groundwater (for example, with oil and gas drilling or open pit coal mining). None of these potential uses can be anticipated at this time and future environmental assessments would be required if such development were to be proposed.

4.1.4 Surface Water Rights

Water rights on BLM lands are mainly for stock water, waterfowl, or wildlife use from stock water ponds, wells, or direct use from streams. The BLM water rights and uses are appurtenant to the land and would transfer to the new owner and continue for the purposes designated. Rights filed in the name of lessees of BLM lands would continue to be used by the lessee. Water rights held by other entities would be retained by those entities.

Water rights on the private lands to be acquired will transfer to the federal government for the use and benefit of the Crow Tribe. For stockwater rights, where the place of use and point of diversion are the same place (for example, a stock water pond on the private land within the Reservation) the water right

associated with that use is appurtenant to the land. This means that the water rights developed on private lands in this exchange will transfer with the land to the United States to be held in trust for the Crow Tribe. In most cases, the development needed to provide water to fulfill the right was done by the previous landowners. The water right became an improvement on the property for use and enjoyment by the owner or in this case the Crow Tribe.

There are five water rights recorded on the private land to be acquired. However there are numerous fee tribal allotments within the ranch unit that also depend on some of those water rights for grazing purposes because they have been utilized in the past as a part of the overall ranch unit. Because the traditional pattern of grazing involves pasture units much larger than some of the tracts of private land to be acquired, circumstances arise where there is no water on those private tracts and as a result, it may be critical that the use of the adjacent fee tribal allotments be continued. The same is true when a fee tribal allotment does not have water, but depends on a water source on a nearby tract of private land to make it fully useable for grazing. These impacts are hypothetical at this time and not enough information is available to individually characterize the impact to each of the tracts involved. However, it is assumed that these tribal allotments will continue to be a part of the overall ranch unit and as a result, water would be available to all of the various tracts within the ranch unit.

4.1.5 Vegetation

Most, if not all, of the BLM tracts are utilized for grazing purposes and it is expected that use will not change as a result of the land exchange. However, some parcels are adjacent to or in the area of cultivated farmland and may have soils and topography suitable for cultivation. It is possible that the conveyance of some of these lands could result in the cultivation of portions of some parcels. However, this is not expected to occur in the near term due to the severely depressed grain markets and the current emphasis to reduce grain production through the Conservation Reserve Program and other such efforts.

There is also the possibility of future timber harvest

on BLM parcels F102, F114, F171, and M103 which have merchantable timber on them. Following is a summary of the timber volumes, etc. on these four parcels.

F102—This 120 acre tract has merchantable timber on 105 acres and the remaining 15 acres consists of sagebrush/grass or non-commercial trees. The timber cruise determined that the tract has a combined total of 374,712 board feet of Ponderosa Pine, 50,388 board feet of Douglas Fir, and 83,823 board feet of Lodgepole Pine. About 47 acres of the tract are on slopes in excess of 45% and would require some form of cable logging while 58 acres are on slopes that are suitable for ground based equipment. Existing roads in the area could be utilized if harvesting were to occur and it is estimated that one mile of new road construction would be needed.

F114—This 40 acre tract has 25 acres of merchantable timber and the remaining 15 acres consists of sagebrush/grass or non-commercial species of trees. The timber cruise determined that the tract has 120,862 board feet of Ponderosa Pine and 5,501 board feet of Douglas Fir. The tract has 20 to 30 percent slopes thus allowing for any potential harvesting to be done by ground-based logging equipment. The current road system in that immediate area would likely be utilized if harvesting were to occur and only minimal road construction would be required.

F171—This parcel consists of five small BLM tracts of which three have merchantable timber on a portion of them. The total acreage of these three tracts is 160 acres of which 61 acres has commercial timber. The remaining acreage consists of sagebrush/grass or non-commercial coniferous trees. The timber cruise determined that there is 334,000 board feet of Ponderosa Pine and 151,000 board feet of Douglas Fir. There is an existing road system in place which could be utilized if harvesting were to occur and it is anticipated that no new road construction would be required.

M103—This parcel consists of 160 acres of which 103 acres have merchantable timber on them and the remaining acreage consists of sagebrush/grass or non-commercial coniferous trees. The timber cruise determined that there is 266,356 board feet of

Ponderosa Pine and 179,226 board feet of Douglas Fir on the parcel. Seven acres are on slopes in excess of 45% and would require some form of cable logging while 96 acres has slopes less than 20% and could be logged using conventional ground based equipment. Existing roads in the area could be used if harvesting were to occur and it is estimated that one-half mile of new road would be required. However, the surrounding landowner, who likely will acquire this parcel, is not interested in harvesting the timber and so there probably would not be any change in the vegetative cover due to timber harvesting, at least in the near term.

Other potential impacts to vegetation on the BLM and the private lands after the exchange has been completed could result from different grazing policies or management practices that allow changes in the current stocking levels of livestock. This could result in either more or less grazing than presently occurs. More grazing could result in overgrazing, which would lead to increased erosion, and might alter species composition on the lands, including introduction and spread of weeds. Less grazing, over time, might also result in a species composition shift towards native species in proportions closer to what existed before livestock grazing was introduced. However, the BLM lands are fenced in with adjacent private lands and it is assumed that the present grazing practices will continue after the exchange is completed.

For the private lands to be acquired on the Reservation, grazing policies and practices are sufficiently vague when comparing private land grazing practices to Tribal trust leases, that any prediction of future impacts would be purely hypothetical. It is assumed that both the private landowners and the Tribe have vested interests in the long-term productivity of these lands. Therefore, stocking levels will probably remain similar to present levels.

4.1.5.2 Rare Plants

As a result of information received from the Montana Natural Heritage Program, there are no known rare plants on the BLM land to be disposed or the private lands to be acquired and as a result, there is not expected to be any impacts to rare plants. However,

without an intensive on-the-ground inventory, it is difficult to say for certain that rare plants would not be affected, but given that the land use on most BLM parcels and on the private land to be acquired is not expected to change, no new impacts to any rare plants which may exist on that land are expected to result from the exchange.

4.1.5.3 Noxious Weeds

Noxious weeds are known to occur on BLM parcels M004 and M005 (spotted knapweed and scotch thistle), HC074 (Russian knapweed), and there is known to be leafy spurge on private lands adjacent to parcels T003 and T004. BLM has a weed control program for the land it manages, but with the large amount of acreages to treat for noxious weeds, it is not likely that these small isolated tracts, which are being considered for disposal, will get treated before other larger blocks of BLM land with more significant resource values. Once the land is conveyed into private ownership it is more likely that these weed infestations will get the attention needed by the new landowner in order to control noxious weeds.

Known noxious weeds on the private lands to be acquired include Canada thistle, hounds tongue, and field bindweed. Because these lands will become trust lands after acquisition, the control of the noxious weeds will be the joint responsibility of the Bureau of Indian Affairs and the Crow Tribe. Both of these entities have an active noxious weed control program.

4.1.6 Wildlife Habitat and Fisheries

All of the BLM land, except parcels M009, M012, and M103 (elk winter/spring concentration area) and M017 (mule deer winter/spring concentration area) have moderate to low on-site values for wildlife. Of the four parcels which are within winter/spring concentration areas for mule deer and elk, only parcel M103 has merchantable timber on it, but the entity which will acquire that parcel is not interested in harvesting timber on that land after the conveyance has been completed. The other three parcels are in a foothills grassland vegetative type and grazing

management of those parcels would likely continue as in the past in conjunction with adjacent private land.

Overall, the exchange of the isolated parcels into private ownership is not expected to have a significant impact on wildlife or riparian habitat because current management of most of these tracts will most likely continue as in the past in conjunction with the adjacent private land. Any conversions of rangeland to cropland, which is a possibility for Parcels B021, H001, H005, and HC074, could have detrimental effects on wildlife dependent on native range. These four parcels are adjacent to or within the immediate area of cultivated farmground. Even though dry cropland offers some wildlife benefits, the wildlife benefits of leaving the land as rangeland will be lost if there are conversions of rangeland to cropland. However, none of the tracts which have cropland potential have crucial wildlife habitat on them.

The wildlife habitat on Parcels F102, F114, and F171 could be affected if the merchantable timber on those parcels is harvested after conveyance has been completed. Parcel M103 has merchantable timber on it, however, as stated previously, the entity which will acquire M103 is not interested in harvesting timber on that land after the exchange has been completed. In regards to possible timber harvest on any or all of the parcels with merchantable timber on them, there could be both negative and positive impacts to wildlife and wildlife habitat. Even though this EA cannot address specific impacts of a future timber sale, the following discussion addresses some of the general impacts that might result from timber harvest.

Timber harvest on these tracts could have short-term adverse impacts to many species of wildlife and particularly could harm big game security habitat, however, the relatively small amount of merchantable timber acreage involved would minimize the overall effects. In the worst case, removal of the conifer canopy could inhibit mule deer and elk winter use and somewhat increase vulnerability during the hunting season. While none of the tracts, except a portion of F171, do not have public access, it is assumed that landowners controlling access could hunt on the parcels or allow hunting access to the area. The impacts and their severity would depend on the amount of timber harvested, the method of

harvest, the timing of the harvest, road construction, road closures, and many other factors. Another impact related to timber harvest is that it could reduce the number of large trees used by raptors.

Deferring or even stopping the harvest of timber would not guarantee that wildlife impacts might not occur. Any forested land in the dry, hot summer environment of Montana has a substantial risk of loss to fire in any year. Although detrimental wildlife effects are associated with timber harvest, it can also benefit wildlife habitat by compartmentalizing and reducing fuels, thereby reducing the risk of large fires. Timber harvest may provide more grass, forb and shrub forage and may increase the grazing capacity of the parcel for a period of time until new timber growth again shades the understory and restricts herbaceous growth.

Those BLM parcels which have legal public road access could be utilized for residential purposes. However, this would be likely to occur only in those areas where there already is some residential development such as Parcel D-1 which is within an existing subdivision. This essentially would be an expansion of an existing residential area and consequently, the impact to wildlife would be minimal because of that specific action. However, over a long period of time sustained rural residential development in an area does increasingly have a negative effect on wildlife habitat.

Even though there are short stretches of four perennial streams (Marias River, Battle Creek, Little Elk Creek, and Eagle Creek) located adjacent to or on four BLM parcels and on one private land tract (East Pryor Creek) to be acquired, there is not expected to be any significant impacts to fisheries. No changes are anticipated on any of the BLM or private lands involved in this exchange that would have long term adverse effects on any fishery, stream, river, stock water pond, or wetland.

Wildlife habitat would continue to be good to excellent on the private land to be acquired on the Crow Reservation, but because of hunting policies and lack of escape cover, the land would continue to be under-used by the big game species heavily hunted by tribal members. All of the tracts of private land to be acquired that are not cropland are expected to

continue as native rangeland under the Tribal leasing program.

4.1.6.1 Threatened and Endangered Species

The BLM parcels do not have any known threatened or endangered species on them. However, some of the BLM tracts are located in areas which are a part of large habitat areas for the swift fox and mountain plover, but none of those BLM lands specifically provide crucial or critical habitat for those species. Additionally, given that no immediate land use changes are anticipated by the exchange within those areas designated as possible habitat for those species, except for the possibility of isolated instances of rangeland to cropland conversions, no impacts are anticipated to any threatened or endangered species as a result of the exchange.

There are no known occurrences of threatened or endangered species on any of the private lands to be acquired. None of the private lands have any habitat critical to any threatened or endangered species.

4.1.7 Recreation

The BLM lands receive a minimal amount of recreational use because of the lack of legal public road access to most of the BLM tracts. Of the 52 BLM parcels being considered for use in the exchange, only five have legal public road access. Additionally, recreational use on the BLM land is limited due to the fact that many of those parcels are isolated from other public land, they have low resource values, and/or generally are of a small size. A portion of Parcel F171 (SESE, section 15, T13N, R20E) was noted in Chapter 3 (3.1.7) as being utilized for hunting grouse. This is a forty acre tract which has a county road through it. Once the forty acre tract is disposed that hunting opportunity may be lost. However, because the tract is only forty acres in size and the boundaries may be difficult to determine on the ground, the disposal of the tract may alleviate some trespass concerns due to someone inadvertently crossing from the BLM land unto the private land without the proper authorization or permission. All of the aforementioned factors limit the recreational opportunities available on the BLM parcels.

Some of the BLM tracts have coniferous trees on them which allow for a greater variety of recreational pursuits. However, again, most of the parcels do not have legal public road access to them and this, along with their scattered isolated location relative to other public land, significantly reduces the potential for public recreation on those tracts. None of the parcels show an outward indication of significant recreational use. Most of the BLM tracts are far enough from population centers to be removed from all but occasional recreational use, which probably would occur only during hunting season.

On the Crow Reservation, only three tracts of the private land to be acquired in Phases 4 and 4A are legally accessible to the public for recreational use. Since non-Indians are not allowed to hunt big game on Tribal lands or Tribal trust lands on the reservation, these tracts will likely receive very little recreational use. Hunting for upland game birds could be done on these three tracts with the proper authorization. Generally, most of the private land to be acquired is not legally accessible to non-tribal members and so the recreational use would be limited to Tribal members. For that reason, the acquisition of the private land may provide more recreational opportunities for Tribal members.

4.1.8 Cultural Resources

There will be no known cultural resource values considered eligible for the National Register of Historic Places impacted or affected as a result of the exchange. The BLM lands had a Class III cultural inventory conducted on them and there were no significant cultural sites considered eligible for the National Register of Historic Places found on those tracts, except for Parcel M103. There was a significant cultural site found on Parcel M103, but mitigation of that site will be completed in coordination with the Montana State Historic Preservation Office prior to conveyance. The private land to be acquired will become federal trust land and as a result any change in land use or additional surface disturbance would require a cultural survey. The Bureau of Indian Affairs would be responsible for these lands that ultimately become part of the Tribal trust lands within the Reservation.

4.1.9 Access

There are unimproved roads or trails on many of the BLM lands involved in the exchange. However, only five parcels have legal public road access and all rights associated with those authorized access roads will be retained for continued public use. A few BLM parcels have access to them by virtue of the fact they are adjacent to other public land, but once the land is conveyed into private ownership that access will no longer be available.

Only three tracts of the private land to be acquired in Phases 4 and 4A have legal public road access to them which consists of two BIA roads. These tracts are located in the area of Hay Creek. This access will continue after the acquisition of those private lands. The remainder of the private land is accessible by unimproved four-wheel drive trails which are difficult to use any time there are muddy conditions, but especially during the spring. The use of these roads will likely only be available to those who own Tribal allotments in that area and other Tribal members. Since the Crow Tribe already owns the private lands to be acquired, the access situation on the private lands will likely not change as a result of the acquisition.

4.1.10 Socioeconomics

4.1.10.1 Grazing

Grazing receipts overall to the BLM would decrease \$1,387.10 if all of the BLM tracts were exchanged into private ownership. The affected Counties in which the BLM lands are located would stand to lose somewhat in the area of grazing fees since all, except six, of the BLM parcels generate revenue from leases for livestock grazing. This is because a portion of all of the grazing fees from BLM lands are returned to the State of Montana who then shares them with the counties in which those fees originated. However, this loss to the counties will be minimal for the following reasons: 1) The return of grazing fees from BLM to the State is 12 1/2% of fees collected within a grazing district and 50% of fees collected on land outside of a grazing district, 2) The total amount of

grazing fees collected is relatively small due to the low number of AUM's on most of the BLM parcels, 3)The low fee charged per AUM which is \$1.43/AUM, and 4)The reduction in that portion of the grazing fees to be returned to the counties would be spread over six affected counties. Table 4-1 shows the potential impact to grazing fee receipts if all lands were conveyed in each county and also shows how those impacts would be distributed among range improvement, State/County payments, and the Federal Treasury.

Also, because there are intrinsic values to private land ownership that are not quantifiable, it is not practical to try to determine if the fair market value paid by a private party to acquire BLM lands is more cost effective than simply continuing with a BLM lease, which is invariably less expensive. However, if the land were subleased for grazing after being acquired by a private individual, the owner could potentially collect lease fees much higher than the BLM grazing lease rate.

On the private land to be acquired the grazing management of those lands will likely continue as they have since the Crow Tribe acquired the property in January of 1999.

4.1.10.2 Timber

BLM parcels F102, F114, F171, and M103 have merchantable timber on portions of them. All four parcels have a total combined acreage of 560 acres and of that, 294 acres have merchantable timber. This merchantable timber consists of 1,095,930 board feet of Ponderosa Pine, 83,823 board feet of Lodgepole Pine, and 386,115 board feet of Douglas Fir. If that timber was harvested there would be some temporary adverse impacts to wildlife habitat on those parcels, but there would also be a benefit to the local economy because the timber likely would be hauled to a mill in that region, thus providing jobs to the harvesters and feedstock to the mill. However, as stated previously, it is unlikely that the merchantable timber on Parcel M103 will be harvested in the near future because the entity which is to acquire that land is not interested in harvesting the timber after the land exchange has been completed.

There is no merchantable timber on the private lands on the Crow Reservation, so no revenue would be generated by timber sales from these lands either before or after the exchange.

Table 4-1 Estimated Change in Grazing Fee Receipts after Exchange

County	AUM Change	Grazing Fee	Total Receipts	Range Improvements	States / Counties	Federal Treasury
Blaine	-189	\$1.43	-\$270	-\$135	-\$34	-\$101
Chouteau	-37		-\$53	-\$26	-\$7	-\$20
Fergus	-234		-\$335	-\$167	-\$42	-\$125
Hill	-40		-\$57	-\$29	-\$7	-\$21
Madison	0		\$0	\$0	\$0	\$0
Meagher	-452		-\$646	-\$323	-\$81	-\$242
Toole	-18		-\$26	-\$13	-\$3	-\$10
Total	-970		-\$1,387	-\$693	-\$173	-\$520

Totals may not add due to rounding. Assumptions for estimates: Grazing fee remains at \$1.43 and all lands are Section 3 (within grazing districts).

4.1.10.3 Payment in Lieu of Taxes

The potential effect on PILT payments to each county is shown in Table 4-2. The analysis assumes all lands identified in the Proposed Action for exchange would be conveyed. Table 4-3 provides a summary of the estimated impacts for each county and shows the estimated per-acre change for each public land acre conveyed.

As shown in Table 4-3, there will be a reduction of PILT for most of the affected counties, however, this

reduction in PILT will be somewhat offset by the fact that once the BLM lands are conveyed into private ownership, they will then be subject to property taxes within those respective counties.

The private lands to be acquired in Big Horn County were not eligible for PILT payments before the exchange nor would they be eligible for PILT payments after the exchange. Consequently, there would be no change in the PILT payments for Big Horn County.

Table 4-2 Estimated PILT Impacts from Proposed Action

County	Change BLM Acreage	Entitlement Acres	Prior Year Payments	Population	Payment Ceiling	Ceiling in Effect?	Alternative A (1)	Alternative B (2)	Estimated Payment (3)	Proration (4)	Actual Payment (5)
Blaine	-945	452,519	\$ 2,477	7,000	\$792,470	Yes	\$789,993	\$117,655	\$789,993	0.588196	\$464,671
Chouteau	-280	157,652	\$10,661	5,000	\$721,320	No	\$292,031	\$40,990	\$292,031		\$171,771
Fergus	-1,133	487,639	\$22,044	12,000	\$1,022,400	No	\$916,223	\$126,786	\$914,223		\$537,742
Hill	-194	47,596	\$578	17,000	\$1,269,900	No	\$98,806	\$12,375	\$90,806		\$53,412
Madison	-72	1,051,673	\$52,919	7,000	\$792,470	Yes	\$739,551	\$273,435	\$739,551		\$435,001
Meagher	-2138	481,745	\$76,876	1,932	\$248,049	Yes	\$171,173	\$125,254	\$171,173		\$100,683
Toole	-160	45,419	\$1,574	5,000	\$641,950	No	\$85,630	\$11,809	\$85,630		\$50,367

Notes: This analysis assumes all 2001 PILT payment factors remain unchanged, except: 1) the number of entitlement acres is reduced to reflect the number of acres available for conveyance; and 2) "prior year payments" are reduced to reflect the reduction in grazing fee receipts returned to the counties. Source: U.S. Dept of the Interior, Bureau of Land Management. 2001. *Payment in Lieu of Taxes Fiscal Year 2001*.

Table 4-3 Summary of PILT Impacts from Proposed Action

County	Total Change After Exchange	% of County's PILT this Change Represents	Change per Acre
Blaine	+\$20	0.00%	+\$0.02
Chouteau	-\$312	-0.18%	-\$1.11
Fergus	-\$1,255	-0.23%	-\$1.11
Hill	-\$125	-0.40%	-\$1.11
Madison	\$0	0.00%	\$0.00
Meagher	+\$48	+0.05%	+\$0.02
Toole	-\$179	-0.35%	-\$1.12
Total	-\$1,893		-\$0.38

4.1.10.4 Property Taxes

The conveyance of the BLM land into private ownership will generate more property tax revenue for each of the counties where the BLM land is located. Table 4-4 provides a summary of the estimated amount of change for each affected county if all of the BLM land is conveyed into private ownership. The analysis assumes lands would be classified as G-4 grazing.

The land in Big Horn County which will be acquired by the federal government will no longer be subject to property taxes and as a consequence will reduce the amount of property tax revenue available to that County. The reduction in property taxes in Big Horn County as a result of acquiring the private land is estimated to be \$1704.27(See Table 3-18).

Even though Big Horn County will lose tax revenue because of the acquisition of private land in that county, this impact is not avoidable because the Crow Boundary Settlement Act specifically mandates the Bureau of Land Management to acquire private land within the Reservation in lieu of State lands which had previously been patented into private ownership. The Pryor Creek Ranch was identified by the Crow Tribe for acquisition pursuant to the Crow Boundary Settlement Act and they actually purchased the ranch in January of 1999 in anticipation of the acquisition of a portion of it by the federal government.

4.1.10.5 Land Use Authorizations

Other than authorization for livestock grazing, the only other surface use authorizations on the BLM parcels are for rights-of-way. There are 13 right-of-way authorizations which affect 9 of the BLM parcels being considered for disposal. These right-of-way grants are for different types of uses including a highway, transmission lines, underground telephone

cables, oil and gas pipeline, water pipeline, and a railroad. Table 3-10 delineates which BLM parcels are affected by these authorizations, the type of use for the right-of-way and the name of the right-of-way holder. Some of these authorizations are for a perpetual period of time while others are effective for only a specific number of years. For those rights-of-way which have a perpetual term, the conveyance document will be issued subject to those authorizations. For those right-of-way grants which do not have a perpetual term, they will be converted to an easement through the efforts of the exchange facilitator, the holder of the BLM right-of-way grant, and the prospective new owner of the BLM land. These easement documents must be executed prior to closing of the exchange transaction and held in escrow. Upon closing of the exchange, the easement documents will be released and will be effective at that time. The purpose of converting these rights-of-way to easements is to protect those holders whose authorization will expire after the land is conveyed out of federal ownership and as a result, could encounter difficulty with obtaining a new authorization from a new land owner at some time in the future. If such a situation was allowed to occur, the right-of-way holder could encounter various types of adverse financial impacts, including the possibility of having to re-locate the facility which is currently authorized by the right-of-way, but by converting those rights-of-way to easements, those types of situations will be avoided.

For those ten parcels which currently have an oil and gas lease on them (HC012, H005, H016, B029, B030, B040, B041, T003, T015, and M027), there would not be any compensation for surface disturbance if oil and gas development specific to that lease were to occur after conveyance and before the current oil and gas lease expires.

For the lands to be acquired, the conveyance will be issued subject to valid existing rights.

Table 4-4 Estimated Increase in Property Tax after Conveyance of BLM Lands

County	Parcel #	Acres	County Levy District	Avg G4 Mkt Value	Taxable Rate	Current Mill Levy	Estimated Tax	Average Tax per Acre
Blaine	B-021	40.00	14	\$27.85	0.0346	328.211	\$13	\$0.32
	B-029	40.00	14			328.211	\$13	\$0.32
	B-030	40.00	14			328.211	\$13	\$0.32
	B-032	120.00	67			292.821	\$34	\$0.28
	B-033	188.30	67			292.821	\$53	\$0.28
	B-035	77.06	14			328.211	\$24	\$0.32
	B-036	40.00	14			328.211	\$13	\$0.32
	B-037	80.00	14			328.211	\$25	\$0.32
	B-038	80.00	14			328.211	\$25	\$0.32
	B-039	40.00	14			328.211	\$13	\$0.32
	B-040	40.00	24			292.821	\$11	\$0.28
	B-041	40.00	24			292.821	\$11	\$0.28
	B-065	80.00	14			328.211	\$25	\$0.32
	B-072	40.00	14			328.211	\$13	\$0.32
Total Blaine		945.36					\$286	\$0.30
Chouteau	HC-012	40.00	26	\$27.85	0.0346	317.99	\$12	\$0.31
	HC-049	120.00	11			376.57	\$44	\$0.36
	HC-051	37.67	11			376.57	\$14	\$0.36
	HC-057	40.00	7			376.54	\$15	\$0.36
	HC-062	40.00	1			475.99	\$18	\$0.46
	HC-074	2.04	11			376.57	\$1	\$0.36
Total Chouteau		279.71					\$103	\$0.37
Fergus	F-005	90.00	115	\$27.85	0.0346	465.07	\$40	\$0.45
	F-021	120.00	115			465.07	\$54	\$0.45
	F-085	163.44	74RF			420.67	\$66	\$0.41
	F-102	120.00	1V			468.26	\$54	\$0.45
	F-114	40.00	1			458.59	\$18	\$0.44
	F-171	120.00	1			458.59	\$53	\$0.44
	F-171	120.00	27			403.99	\$47	\$0.39
	F-200	160.00	74RF			420.67	\$65	\$0.41
	F-201	160.00	74RF			420.67	\$65	\$0.41
	F-204	39.39	27			403.99	\$15	\$0.39
Total Fergus		1,132.83					\$477	\$0.42
Hill	H-001	114.04	A57H	\$27.85	0.0346	321.40	\$35	\$0.31
	H-005	40.00	16RJ			445.51	\$17	\$0.43
	H-016	40.00	16RJ			445.51	\$17	\$0.43
Total Hill		194.04					\$70	\$0.36
Madison	D-1	71.72	27	\$27.85	0.0346	342.42	\$24	\$0.33
Meagher	M-002	120.00	80	\$27.85	0.0346	385.48	\$45	\$0.37
	M-003	200.01	80			385.48	\$74	\$0.37
	M-004	320.00	80			385.48	\$119	\$0.37
	M-005	80.00	80			385.48	\$30	\$0.37
	M-006	80.00	80			385.48	\$30	\$0.37
	M-007	80.00	80			385.48	\$30	\$0.37
	M-008	120.00	80			385.48	\$45	\$0.37

Table 4-4 Estimated Increase in Property Tax after Conveyance of BLM Lands

County	Parcel #	Acres	County Levy District	Avg G+ Mkt Value	Taxable Rate	Current Mill Levy	Estimated Tax	Average Tax per Acre
	M-009	155.75	80			385.48	\$58	\$0.37
	M-012	170.58	80			385.48	\$63	\$0.37
	M-017	320.00	80			385.48	\$119	\$0.37
	M-023,024	200.00	80			385.48	\$74	\$0.37
	M-026	49.78	80			385.48	\$18	\$0.37
	M-027	81.42	80			385.48	\$30	\$0.37
	M-103	160.00	80			385.48	\$59	\$0.37
Total Meagher	2,137.54					\$794	\$0.37	
Toole	T-003	40.00	14	\$27.85	0.0346	382.03	\$15	\$0.37
	T-004	40.00	14			382.03	\$15	\$0.37
	T-009	40.00	14			382.03	\$15	\$0.37
	T-015	40.00	2			376.68	\$15	\$0.36
Total Toole	160.00					\$59	\$0.37	
Total All Counties	4,921.20					\$1,812	\$0.37	
Source: MT Dept of Revenue (County offices), 2002.								

4.1.11 Hydrologic and Soil Resources

On the BLM lands, some soil disturbance and hydrologic impact could be associated with any roads built to improve access, harvest timber or convert rangeland to cropland after the exchange has been completed. If timber harvest were to occur on those BLM parcels with merchantable timber, this would create changes in the hydrologic regime by generally increasing the amount of precipitation that reaches the ground surface and the rate of spring snow melt and decreasing the evapotranspiration within the harvested area. These changes occur rapidly following harvest, but are dynamically changing as regrowth occurs and are difficult to predict.

Soils could become prone to excessive erosion if overgrazing were to occur as a result of the exchange. However, the BLM lands are fenced in with other private land and are already being grazed in

conjunction with management and practices currently being used on those private lands.

On the lands to be acquired on the Crow Reservation, there is not expected to be any significant change in the grazing management and cropland cultivation practices currently employed by the Crow Tribe on that land.

4.2 Impact of No Action

The No Action alternative assumes that the proposed exchange of lands will not be approved and will not take place. It basically maintains the status quo with regard to land ownership, management policy, and revenues. It does have some consequences because the BLM will still remain under statutory obligation to provide private land exchanges to make up for State land which had previously been conveyed into private ownership.

4.2.1 General Geography, Topography and Aesthetics

No impacts are anticipated to the geography, topography or aesthetics of the BLM or private lands under the No Action alternative because ownerships would not be exchanged and land management practices would continue as they have in the past.

4.2.2 Climate

Climate would not be affected by the No Action alternative.

4.2.3 Groundwater, Geology and Mineral Potential

The No Action alternative would have no effect on groundwater or geology. BLM would maintain both surface and sub-surface estates for the lands it holds. The Crow Tribe would continue its ownership of the private lands proposed for acquisition.

4.2.4 Surface Water Rights

There would be no effect on the BLM lands or the private lands. Current holders of those water rights and grazing lessees would continue to utilize water and water developments as has been done in the past.

4.2.5 Vegetation

Management practices would continue as they have in the past and consequently, there likely would be no impact to the vegetation as a result of the No Action Alternative. The exception to this could be for Parcels F102, F114, F171, and M103 where BLM could implement timber management to reduce hazardous fuels and the risk of wildfire on those

tracts. Lands with suitable soils and topography that have potential for cultivation will remain unchanged under BLM management. However, when BLM initiates another private exchange, in order to fulfill the requirements of the Crow Boundary Settlement Act, there would still be the potential for some of those BLM exchange tracts to be converted to cropland after conveyance into private ownership.

4.2.5.1 Rare Plants

There would be no impacts to rare plants under the No Action alternative.

4.2.5.2 Noxious Weeds

No Action would result in the BLM and the Crow Tribe continuing to be responsible for weed identification and control on the lands each entity presently administers. The Crow Tribe also works jointly with the Bureau of Indian Affairs in regards to the control of noxious weeds on Tribal lands on the Reservation.

4.2.6 Wildlife Habitat and Fisheries

Wildlife habitat generally would be unaffected and unchanged from present conditions by the No Action alternative. The exception to this could be for Parcels F102, F114, F171, and M103 where BLM could implement timber management to reduce hazardous fuels and the risk of wildfire on those tracts.

4.2.6.1 Threatened and Endangered Species

There would be no impact to any Threatened or Endangered species under the No Action alternative because land ownership and management would remain as it is currently.

4.2.7 Recreation

BLM lands would continue to have recreational use similar to that which currently exists. The private lands also would continue to be used as they have in the past.

4.2.8 Cultural Resources

Under the No Action Alternative, there would be no effect to cultural resources on either the BLM or the private lands.

4.2.9 Access

Access would not change under the No Action alternative. BLM parcels would continue to be administered under BLM's access policy and the Crow Tribe would continue to administer access on the private lands proposed for acquisition.

4.2.10 Socioeconomics

Grazing revenue from the BLM land, PILT payments, and property taxes would continue to be collected as they have in the past. There would be no change in these payments if the exchange proposal is not implemented. However, a significant adverse impact of the No Action Alternative would be a delay in the completion of this land exchange and thereby depriving the Crow Tribe of timely and complete economic benefits of the Crow Boundary Settlement Act.

4.2.10.1 Timber and Grazing Revenue

Grazing revenue from the BLM land would continue to be collected and dispersed as it has in the past. Timber harvesting on Parcels F102, F114, F171, and M103 could be proposed but likely would not occur in the near future.

4.2.10.2 Payment in Lieu of Taxes and Property Taxes

Under the No Action alternative, PILT payments to the State and Counties would continue on the same basis as was done in the past and property taxes would remain unchanged.

4.2.11 Hydrologic and Soil Resources

There is no foreseeable change in the hydrologic and soil resources under the No Action alternative because ownerships and management practices would continue as they have in the past.

4.3 Comparison of Alternatives

Table 4-5 compares the alternatives by examining the various impacts for various significant resource issues described in Chapter 3, Affected Environment.

Table 4-5 Alternative Comparison and Impact Summary

Public or Agency Issues	Proposed Action or Exchange Alternative	No Action
Payment in Lieu of Taxes (PILT)	An estimated decrease in PILT payments would occur for Chouteau County (\$312), Fergus County (\$1,255), Hill County (\$125), and Toole County (\$179) if all of the BLM parcels are utilized. There would actually be an increase in PILT for Blaine County (\$20) and Meagher County (\$48) if all of the BLM parcels are utilized. PILT payments for Madison County would not be affected.	PILT payments would continue on the same basis as was done in the past.
Public Access	Authorized access routes of record across the BLM lands would be reserved in the conveyance to provide for the continued use of those routes for the purposes intended. Walkin access across some BLM Parcels to get to adjacent State or BLM land would no longer be available after the completion of the land exchange.	Public access on BLM lands would maintain the status quo under BLM management. Access on or across the private land would remain as it currently exists.
Property Taxes	Property taxes in all Counties in which the private and BLM lands are located would be affected. If all of the BLM lands were conveyed there would be an increase in property taxes in Blaine County (\$286), Chouteau County (\$103), Fergus County (\$477), Hill County (\$70), Madison County (\$24), Meagher County (\$794), and Toole County (\$59). Some amounts will be less because not all of the BLM land will be needed to close on the transaction. If the private land is acquired as proposed, there would be a decrease in property taxes for Big Horn County (\$1,704).	Property taxes would not be affected in any of the counties if the exchange was not completed.
Grazing Receipts	All Counties where BLM leased land is disposed will have a reduction in the disbursement of grazing receipts. This reduction will be minimal due to the following factors: 1)The return of grazing fees from BLM to the State is 12 1/2% of fees collected within a grazing district and 50% of fees collected on land outside of a grazing district, 2)The total amount of grazing fees collected is relatively small due to the low number of AUM's on most of the BLM parcels, 3)The low fee charged per AUM which is \$1.43/AUM, and 4)That portion of the reduction in overall grazing fees will be spread over six counties.	There will be no change in the amount of funds collected by BLM for those parcels that are currently leased and disbursements to the State and Counties will continue on the same basis as in the past.
Harvesting of Timber	Parcels F102, F114, F171, and M103, which consist of a combined total acreage of 560 acres, have merchantable timber on 294 acres. This timber could be harvested after conveyance, however, there is a very low probability of timber harvest on Parcel M103 in the near term. Due to the small size of the specific areas on each parcel which could be harvested, the fact there is no perennial streams on the tracts, and existing roads in the area could for the most part be utilized, it is expected that impacts would be minimal.	The timber could be harvested by BLM but due to the small amount available, such an action likely would not occur in the near future.

Table 4-5 Alternative Comparison and Impact Summary

Public or Agency Issues	Proposed Action or Exchange Alternative	No Action
Conversion of some BLM Parcels to Cropland	Some BLM parcels have soils and topography which may be suitable to dryland cropland and could be cultivated after conveyance. This may be true of Parcels B021, H001, H005, and HC074 which have cultivated land adjacent to them or are in the immediate area of cropland. However, this conversion to cropland is not expected to occur in the near future for Parcels B021, H001, and H005 due to severely depressed grain markets, the current emphasis to reduce grain production through the CRP Program, and other similar efforts.	The status quo would be maintained
Wildlife Habitat	Current management of most BLM tracts conveyed into private ownership will likely not change because they are suitable mostly for grazing purposes. However, wildlife habitat could be effected if the merchantable timber is harvested on Parcels F102, F114, F171, and M103 (not likely) and those BLM parcels which have suitable soils and topography are converted to dryland cropland, but those impacts are not expected to be significant.	There would be no change to present management of wildlife and habitat
Cultural Resources	All of the BLM land has had a Class III cultural inventory completed on them and there are no significant cultural sites on the tracts, except for Parcel M103, where mitigation will be completed in coordination with the State Historic Preservation Office before conveyance. The private land involved in Phases 4 and 4A have three significant cultural sites which would require mitigation if any surface disturbing action was proposed in those specific areas.	There would be no effect to cultural resources.
Use of BLM Tract Listed in Appendix A	The impacts which would occur, if parcel HC074 was used, have been analyzed in this EA along with the other BLM tracts to be disposed as a result of this assembled land exchange. Parcel HC074 meets the disposal criteria in the West HiLine RMP, especially since it will assist in the fulfillment of the requirements and mandates of the Crow Boundary Settlement Act	The status quo would be maintained

5.0 CONSULTATION AND COORDINATION

This chapter lists State, federal and other agencies consulted in the Crow Boundary Settlement Act land exchange process.

5.1 Federal Agencies

US Department of the Interior, Bureau of Land Management
US Department of the Interior, Bureau of Indian Affairs

5.2 State Agencies

Department of Fish, Wildlife and Parks
Department of Natural Resources and Conservation
State Historic Preservation Office
Montana State Library -Montana Natural Heritage Program

5.3 Tribal Governments

Crow Tribe
Blackfoot Tribe
Chippewa Cree Tribe
Gros Ventre & Assiniboiné Tribes
Assiniboiné & Sioux Tribes
Northern Cheyenne Tribe

5.4 Local Government

Big Horn County Commissioners
Blaine County Commissioners
Chouteau County Commissioners
Fergus County Commissioners
Hill County Commissioners
Madison County Commissioners
Meagher County Commissioners
Toole County Commissioners

5.5 Non-Governmental Entities

Montana Stockgrowers Association

6.0 LIST OF PREPARERS

Name	Contribution	Degree(s)	Experience
Bill Hensley	Timber-BLM lands	B.S. Forest Management	27 years
Russ Sorensen	BLM Project Lead	B.S. Ag. Production	28 years
Loretta Park	Realty	N/A	19 years
Fred Roberts	Wildlife	B.S. Range and Wildlife Mgmt. M.S. Range Management	18 years
Jody Peters	Wildlife	B.S. Wildlife	16 years
Sharon Gregory	Rangeland	N/A	21 years
Francis Rieman	Water Rights	B.S. Microbiology	23 years
Wendy Favinger	Economics	M.S. Economics	12 years
David Coppock	Geology	B.A. Geology	23 years
Brandi Hecker	Realty/Range	B.S. Range Science	2 years
Lou Hagener	Range/Grazing	B.S. Range Science	22 years
Gail Storfa	Realty	N/A	25 years

7.0 LIST OF AGENCIES, ORGANIZATIONS, AND PERSONS RECEIVING COPIES OF THIS ENVIRONMENTAL ASSESSMENT

Montana Dept. of Transportation
2701 Prospect Ave.
Helena, MT 59620

Triangle Telephone Coop.
Box 1230
Havre, MT 59501

Chouteau Co. Commissioners
Chouteau County Courthouse
Fort Benton, MT 59442

Fergus Co. Commissioners
Fergus County Courthouse
Lewistown, MT 59457

Meagher Co. Commissioners
Box 309
White Sulphur Springs, MT 59645

Hill County Commissioners
315 Fourth St.
Havre, MT 59501

Madison Co. Commissioners
Box 278
Virginia City, MT 59755

Big Horn Co. Commissioners
Box 908
Hardin, MT 59034

Blaine County Commissioners
P.O. Box 278
Chinook, MT 59523

Toole Co. Commissioners
226 First Street South
Shelby, MT 59474

Jeff Hagener
Director, MT Dept. of Fish,
Wildlife & Parks
P.O. Box 200701
Helena, MT 59620-0701

MT Dept. of Environmental
Quality
1520 East 6th Ave.
Helena, MT 59620

William Fairhurst
President, Public Lands Access
Assoc., Inc.
105 Third Ave. E
Three Forks, MT 59752

Clay Gregory
Bureau of Indian Affairs
Billings Area Office
316 North 26th St.
Billings, MT 59101

Bud Clinch
Dept. of Natural Resources and
Conservation
P.O. Box 201601
Helena, MT 59620-1601

Linda Grosskopf
Agri-News
Box 30755
Billings, MT 59101

Tony Jewett
Executive Director
Montana Wildlife Federation
P.O. Box 1175
Helena, MT 59624

Reiny Jabs
HCR 36
Hardin, MT 59034-9613

Rick Molen
c/o Senator Burns Office
187 Dirksen Building
Washington, DC 20510

Montana Coalition for Appropriate
Management of State Lands
3210 Ottawa
Butte, MT 59701

Montana Wilderness Assoc.
P.O. Box 635
Helena, MT 59624

Office of Indian Affairs
Room 202 State Capital
Helena, MT 59601

Rep. Bill Eggers
P.O. Box 1000
Crow Agency, MT 59022

Rep. Norma Bixby
P.O. Box 1165
Lame Deer, MT 59043-1165

Clifford Birdinground
Chairman, Crow Indian Tribe
P.O. Box 159
Crow Agency, MT 59022

Jay Bodner
Montana Stockgrowers Assn.
420 North California
Helena, MT 59601

Governor Judy Martz
c/o Heather Kiedrowski
State Capital, Room 204
Helena, MT 59624

Skyline Sportsman's Assoc.
P.O. Box 173
Butte, MT 59703-0173

Lila Taylor
Box 595 HC 42
Busby, MT 59016-9705

Senator Conrad Burns
Attn: Dwight McKay
2708 First Avenue North
Billings, MT 59101

Representative Dennis Rehberg
Attn: Randy Vogel
1201 Grand Avenue, #1
Billings, MT 59102

The Crow Tribe of Indians
P.O. Box 159
Crow Agency, MT 59022

Hill County Electric Coop.
Box 430
Havre, MT 59501

Daniel Watson
P.O. Box 47
Forsyth, MT 59327

Gordon Jackson
P.O. Box 69
Crow Agency, MT 59022

Senator Max Baucus
Attn: Sharon Peterson
207 North Broadway
Billings, MT 59101

American Wildlands
40 East Main, Suite 2
Bozeman, MT 59715

Express Pipeline Partner
421 7th Ave SE #3900
Calgary AB T2P 4K9

Burlington Northern Santa Fe
625 Main Street
Havre MT 59501

Dick Grosskopf
Mont-Wyo West
2720 3rd Ave. North, Suite 250
Billings, MT 59101

Fergus Electric Coop.
Gilt Edge Route, Box 4040
Lewistown, MT 59457

Northwestern Energy
40 East Broadway
Butte, MT 59701

Kevin Spencer
65575 Tweed Road
Bend, OR 97701

Three Rivers Telephone
Cooperative, Inc.
P.O. Box 429
Fairfield, MT 59436

Davis Weinstock
RR#1, Box 420W
Chilmark, MA 02535

John Potter
Attorney-at-Law
P.O. Box 629
White Sulphur Springs, MT
59645

Russ Winegartner
4480 Last Straw Drive
Helena, MT 59602

Marias River Electric Coop.
Box 729
Shelby, MT 59474

Elk Canyon Ranch
1151 Smith River Road
White Sulphur Springs, Mt
59645

Thomas E. & Gladys Walling
P.O. Box 55
Winifred, MT 59489

Tom DeMars
Box 64
Winifred, MT 59489

Lester Sluggett
HC 57, Box 20
Roy, MT 59471

Lawrence Jenni
Rte 2, Box 2228
Lewistown, MT 59457

Don Jenni
Rt. 2, Box 2228
Lewistown, MT 59457

Wes Phillips
RR#3, Box 3192
Lewistown, MT 59457

Julia Jackson Snyder
Box 1099
Lewistown, MT 59457

Boyce Incorporated
c/o Dee Boyce
P.O. Box 802
Lewistown, MT 59457

Miro & Betty Heil
2810 U.S. Highway 191 North
Roy, MT 59471

Harland Rouns
HC 87, Box 5400
Lewistown, MT 59457

Chris & Laura Boyce
HC 76, Box 926
Big Sandy, MT 59520

Robert Braun
General Delivery
Loma, MT 59460

James Cornell
HCR 67, Box 70
Loma, MT 59470

Lazy K- 6 Ranch, Inc.
c/o Steen Andreasen, Brendt
Andreasen & Ed Lenington
Box 613
Fort Benton, MT 59442

Calvin Danreuther
6593 Virgelle Ferry Road No.
Loma, MT 59460

George Gerky
Route 1, Box 44B
Havre, MT 59501

Ron & Leona Beatty
915 Lincoln Ave.
Havre, MT 59501

Signal Butte Grazing Assoc.
HC 30, Box 54
Havre, MT 59501

Fort Belknap Comm. Council
RR1, Box 66
Harlem, MT 59526

Mitchell Ranch
Star Route 70, Box 21
Chinook, MT 59523

Joe, James & Joseph Dunbar
Route 70, Box 28
Chinook, MT 59523

Marvin Fretheim
Box 476
Shelby, MT 59474

Fretheim Bros.
S/o Mike Fretheim
P.O. Box 629
Shelby, MT 59474

Marvin & Jeanne Atkins
P.O. Box 875
Shelby, MT 59474

Dan Roark
P.O. Box 326
Oilmont, MT 59466

Darrell Davis
21 Dry Hollow Road Townsend,
MT 59644

Ben Galt
3660 Hwy 12
White Sulphur Springs, MT
59645

Iverson Cattle Company
c/o Boyd Iverson
3626 Hwy 284
Townsend, MT 59644

Rhynard Ranch LLP & W.E.
Rhynard
102 Saddle Mtn Drive
Clancy, MT 59634

Barbara Heriem
HC 83, Box 547
Martinsdale, MT 59053

David A. Voldseth
HC 83
Martinsdale, MT 59053

David Pump
Box 295
Two Dot, MT 59085

Berg Ranch Co.
c/o Richard Berg
HC 83
Martinsdale, MT 59053

Camas Crk Cattle & Sheep Co
c/o Jeff or Jock Doggett
Box 729
White Sulphur Springs, MT
59645

Wayne D. & Wallace E.
Buckenham
P.O. Box 561
White Sulphur Springs, MT
59645

Holstrom Land Co., Inc.
c/o Robert J. Weitz
760 Newton Cr. Road
White Sulphur Springs, MT
59645

Elk River Law Office
3317 3rd Avenue North
Billings, MT 59101

Dana Ranch Co., Inc.
c/o David G. Cameron
Box 366
Cascade, MT 59421

6666 Ranch
c/o Bryan Douglass
4945 Goodan Lane
Missoula, MT 59808

Bob Oldenburg
Box 35
Lewistown, MT 59457

APPENDIX A—Notice of Intent to Amend the West HiLine Resource Management Plan

DEPARTMENT OF THE INTERIOR
Bureau of Land Management
{Docket No. MT-924-02-1430-FM-003E }

Notice of Intent to Amend the West HiLine Resource Management Plan;
Chouteau County, Montana

AGENCY: Bureau of Land Management, Interior

ACTION: Notice of Intent

SUMMARY: Notice is hereby given that the Bureau of Land Management (BLM) is proposing to amend the West HiLine Resource Management Plan. The BLM proposes exchanging 2.04 acres of Federal surface estate in Chouteau County for private land within the Crow Indian Reservation in Big Horn and Yellowstone Counties as a part of Phase 4A of the Crow Boundary Settlement Act Land Exchange. The Federal land is legally described as:

Chouteau County

T28N, R9E, PMM

sec. 18: Lot 1, containing 2.04 acres, more or less

Disposal of the Federal land described above was not analyzed in the West HiLine Resource Management Plan (RMP) and associated Environmental Impact Statement. Disposal of the Federal land requires: (1) That the specific tracts be identified in the land use plan together with the criteria to be met for exchange, and (2) a discussion of how the exchange criteria have been satisfied. The discussion of how these requirements are being met will be part of the Environmental Assessment prepared to analyze the effects of disposal, as well as the plan amendment itself.

DATES: Comments and recommendations on this notice to amend the West HiLine RMP should be received on or before June 13, 2002.

ADDRESS: Comments should be sent to David L. Mari, Field Manager, Lewistown Field Office, P.O. Box 1160, Lewistown, MT 59457-1160.

FOR FURTHER INFORMATION CONTACT: Loretta Park, Realty Specialist, 406-538-1910.

Dated: February 20, 2002

/s/ W. James Feist
Acting Field Manager

APPENDIX B— US Fish and Wildlife Service candidate, threatened and endangered species, BLM species of special concern, and BLM watch species

The following is a list of US Fish and Wildlife Service candidate, threatened and endangered species, BLM species of special concern, and BLM watch species that have some probability of occurring on one or more exchange land sites.

Common Name	Scientific Name	Status*
<u>Mammals</u>		
black-tailed prairie dog	<i>Cynomys ludovicianus</i>	BLM SSC FWS C
swift fox	<i>Vulpes velox</i>	BLM SSC
lynx	<i>Felis lynx</i>	FWS LT
<u>Birds</u>		
Baird's sparrow	<i>Ammodramus baidii</i>	BLM SSC
bald eagle	<i>Haliaeetus leucocephalus</i>	FWS T
burrowing owl	<i>Athene cunicularia</i>	BLM SSC
ferruginous hawk	<i>Buteo regalis</i>	BLM SSC
interior least tern	<i>Sterna antillarum</i>	FWS E
loggerhead shrike	<i>Lanius ludovicianus</i>	BLM SSC
mountain plover	<i>Charadrius montanus</i>	BLM SSC FWS C
peregrine falcon	<i>Falco peregrinus</i>	FWS T
Swainson's hawk	<i>Buteo swainsoni</i>	BLM SSC
Piping Plover	<i>Charadrius Melodus</i>	BLM SSC FWS T
<u>Reptiles</u>		
snapping turtle	<i>Chelydra serpentina</i>	BLM SSC
spiny softshell turtle	<i>Trionyx spiniferus</i>	BLM SSC
<u>Plants</u>		
Dwarf Woolly-Heads	<i>Psilocarphus Brevissimus</i>	
	Var <i>Brevissimus</i>	BLM W
Little Indian Breadroot	<i>Psoralea Hypogaea</i>	BLM W

BLM SSC = Bureau of Land Management Species of Special Concern

BLM W = Bureau of Land Management Watch

FWS C = Fish and Wildlife Service Candidate

FWS T = Fish and Wildlife Service Threatened

FWS E = Fish and Wildlife Service Endangered

